

December, 1993 - Volume 10, No 12

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SPECIAL
Reader Survey
Inside

Australian Commodore & **AMIGA** For Professional and Home Users

Review



EGS SPECTRUM
AAA Power Today

**Syquest vs
Bernoulli
Removable Mass
Storage**

Hands On CD32
Inside and Out

Tape Backup
with Tamberg

Win a CD32 Player! - p20

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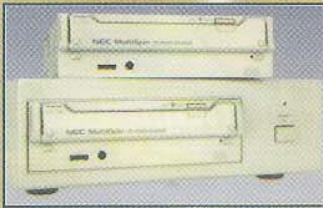
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Call for the "trade up deal" on your machine.



Hints & Tips

CD ROM drives are becoming extremely popular on the Amiga. With the ever increasing range of CD titles becoming available, especially high quality public domain collections, existing Amiga owners are tempted to add a drive to their system at what are now relatively low prices.

As with any new technology, there exists some confusion about what makes one drive better than another. It's important from the outset to make one point clear - CD ROMs are not fast when compared to a hard drive. 'Single spin' drives offer transfer rates of around 150kbytes per second. The transfer rate of the drive is basically proportional to its rotational speed. Hence 'Double-spin' or 'multi-spin' drives achieve double, and more recently, triple, this transfer rate.

Kodak now offer a service where photographs can be processed and stored directly to CD in a special 'Kodak Photo-CD' proprietary format. Up to 100 images can be stored on a single CD, each image stored at resolutions up to 3000 x 2000 in a YC format which is easily converted to IFF 24 bit format. However, if you intend using this service, be sure your CD ROM is 'Photo CD compatible' - many are not. The price of a drive depends mainly on its speed and whether it is Photo compatible. If the drive supports 'multisession', you can have more photos added to your disk at a later date and still read them all.

mh

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The EGS SPECTRUM from GVP fully supports the Display Database starting with Kickstart 2.04. Any programs that open screens from this list will run on the EGS-28/24 SPECTRUM, including Workbench!

Even programs that do not support the Display Database, but do use standard workbench-type screens will also run on the EGS-28/24 SPECTRUM in high-resolution colour.

The high-performance Paint package has abilities and features not found in other paint software, including Pantograph painting, turbo airbrush, and Real-Time 16-million colour painting tools.

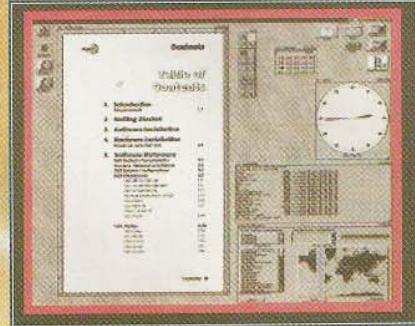
The window-based architecture allows **multiple images** to be opened at once on high-resolution screens (up to 1600x1280) for editing, compositing, and manipulating. This makes life easier than ever before, and is unavailable on competitive products.



The EGS libraries make it easy to develop professional-looking, high resolution, true colour applications that are portable, reliable, and productive.

Years of R&D have gone into these libraries and they offer a very real and very flexible **Retargetable Graphics Operating System** for the Amiga platform.

PLUS the EGS Amiga Pass-Through allows native displays to reach the monitor under software control. This feature eliminates the need for two monitors without sacrificing features.



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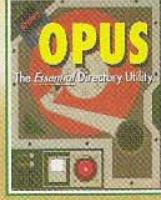
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Contents

Features

- 14 Amiga CD32 - an in depth look**
Will CD32 be the next games King?
- 22 Affordable Tape Backup**
SCRAM plus Tamberg equals peace of mind
- 24 Bernoulli Multidrive vs Syquest 105**
Removable hard drive comparison
- 28 Plug In Next Generation Graphics**
A review of the EGS Spectrum card

Regulars

- 6 Notepad**
- 10 Media Watch**
- 12 Letters**
- 32 Education** - Christmas gifts to amuse and educate
- 42 Hot PD** - Latest Public Domain and Shareware
- 50 Blitz 'em** - more clever functions
- 56 C64 Column** - Modeming
- 58 CanDo Column** - Foreign language file converter

Entertainment

- 66 That's Entertainment**
Latest news, hints and tips
- 69 Adventurers Realm**
Hints & Tips, News, Trading Post, Problems, Clever Contacts
- 72 Game Reviews**
Air Warrior, Pinball Fantasies, Oscar, Diggers, Two Player Games, 101 PD Games, KGB - Full Solution Part 2

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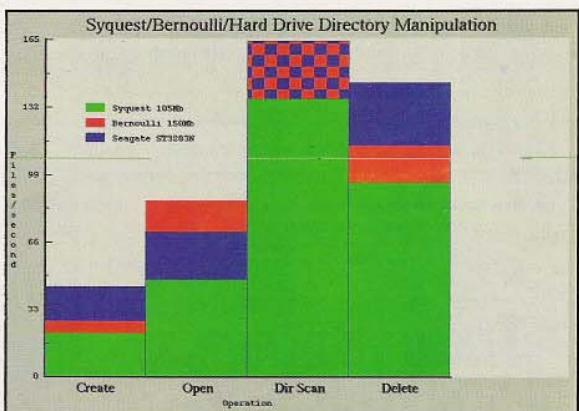
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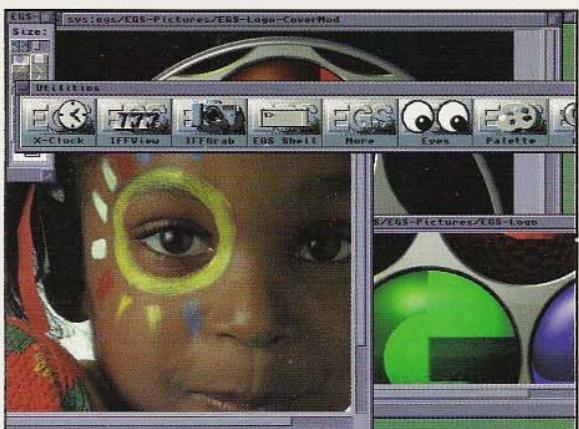
14

Amiga CD32



24

**Bernoulli Multidrive
vs Syquest 105**



28

EGS Spectrum

EDITORIAL

For the past few weeks, we've had the pleasure of testing out the new QuickNet network - a local product which promises to fill a large void in the Amiga world. You see, since the arrival of Workbench 2.0, the only other networking system readily available has been made incompatible.

It is true other expensive and often difficult to obtain alternatives have been available. However, nothing ever replaced the original Hydranet network on which we used to produce *Professional Amiga User*.

Although it's still early days, QuickNet appears to work wonderfully. It is fast, offers reasonable security, and being a local product, support is excellent. The guys who designed the card have big plans to make it compatible with other networks, including Commodore's undelivered *Envoy* software.

Some have said that networking is the single largest shortcoming of the Amiga as a serious business machine. With the arrival of QuickNet, complete Amiga office solutions are possible. Multi-user database applications, publishing environments, electronic mail, multi-player network games - who knows where it will lead. One thing is for sure, products like QuickNet are just what the Amiga

needs. Look for a full review next month.

In this month's issue we checked out CD32 - Commodore's entry into the games console market. Already rumours of third party docking stations offering full computer functionality are surfacing - threatening to kill the Amiga 1200. Imagine a CD32 with a \$500 docking bay. So for around \$1200 you have a CD-ROM based Amiga capable of running rings around any multimedia PC.

Of course, the key to CD32's success will be software. Although tens of titles have been promised before Christmas, getting your hands on more than five CD32 specific titles could be tough going. Thankfully, many CDTV discs will work fine - see the list at the end of our review.

On the whole, CD32 looks very promising. Technically it's right up there. It still remains uncertain as to whether consumers are ready to pay big dollars for dedicated entertainment machines. Judging by the recent multimedia show, digital video may be the key to motivating people to invest in CD based technology.

ANDREW FARRELL



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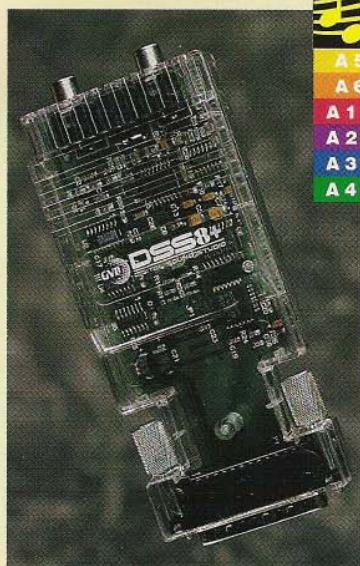


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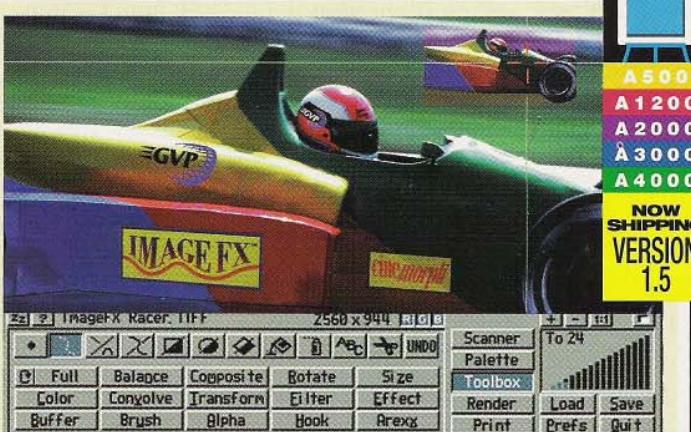
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Notepad

Amiga has it covered at Multimedia Show

At last month's Multimedia Show in Sydney, Commodore combined forces with a number of third party companies to provide visitors with an interesting cross section of applications. The star attraction was CD32, playing Video CD on a large nine screen video wall.

These were the same two clips I viewed briefly at a preview of the unit some time back. However, on the large screen the shortcomings of the MPEG1 video compression method became evident.

Whilst Video CD may be perfect for home use, it is clear MPEG1 leaves much to be desired for serious applications. But then, serious is not what CD32 is all about. In fact, I was at first surprised to see it at this particular event. However, given the unit's low price and true multimedia power, it would seem Amiga CD32 is also an elegant and very affordable delivery platform for kiosk applications.

Numerous Amiga 4000s around the stand were used to demonstrate the various facets of multimedia. Leaving no doubt that desktop video is a part of that definition, both prosumer and professional video editing systems were demonstrated using Amilink. This system spans the complete desktop video spectrum, from entry level wedding videos to professional broadcast quality.

The Amilink software and hardware allows you to grow up without having to learn new programs. However, the price seemed a little steep given the cost of stand alone edit systems. Australian distribution is still being finalised.

Opal Technology demonstrated the Australian designed Video Roaster, an add on module for Opal Vision which offers full Digital Video Effects at a cost far below comparable systems. The catch right now? Roaster technology is still under development. Although the system clearly works, delivery is unlikely until early next year. Since World of Commodore, the software has developed nicely. Get more information on (02) 899 4322.

I also saw a sneak preview of the software used to complete animation for the Emmy award winning Warner Bros program, *Babylon 5*. Of course, the software was Lightwave - with a little help from Lightrave! You see, to run Lightwave you normally need a Video Toaster. However, if you live in Australia, there is not much point in owning the Toaster as it is only capable of processing NTSC video - which is the standard used in America. Whilst conversion is possible, NTSC has poor colour and a lower resolution than our superior PAL system.

The answer is Lightrave. This combination software and hardware dongle enables you to run *Lightwave*, which according to some animators is the best desktop video animation software around. Judging by its acceptance in the United States, it would seem this is true. Expect to pay around US\$1800.

Another local company, Phoenix Microtechnologies, showed off a lighting control system called Aladdin. Once again, a combination of software and hardware, Aladdin allows complete synchronisation of multimedia presentations with lighting. You can even alter lighting settings in a theatre from a cordless phone, allowing the producer to view various settings from the audience perspective - (08) 293 8752.

Other exhibitors included Desktop Utilities, SigmaCom and Digipic Productions, who showed off the new Bernoulli removable drive's amazing ability to withstand shock. Mounted on a piston which hammered the drive against the edge of perspex box, the unit happily chugged away playing a large animation without one hiccup. Amazing! The Bernoulli offers low cost mass storage, and good access speed - ideal for multimedia.

For more information call (02) 948 2766.

Not a bad exhibit, although the Amiga's mainstay multimedia program, *Scala MM200*, maintained a conspicuously low profile. Perhaps when the new version expected soon arrives, all will change.

Design Your Own Home

DevWare has released an updated version of its *HomeBuilders CAD 2.0*, a package for design, changing or estimating anything from an extra room to a block of flats. The package used to sell for more than \$US400, and is now only \$US89.95.

This new version allows up to 1000 items per layout and includes the Library 1 disk of furniture and kitchen cabinets, as well as the DeckBuilder's CAD Design and Es-

timating System for Decks. The package can handle a 20-acre drawing area, over 300,000 layers, accuracy to 1/60th inch, and buildings over 200 stories high.

The package even includes a spreadsheet-style cost estimator, and requires at least 1.5Mb RAM or 2.5Mb for floppy users.

Contact DevWare at 12520 Kirkham Court, Suite 1, Poway, CA 92064, phone 619/679-2828, fax 619/679-2887.

Superpowered Wordpro

Final Writer, the high end companion to SoftWood's highly successful *Final Copy II*, offers many desktop publishing features in a friendlier word processing environment. *Final Writer* is very configurable, with user-definable command buttons and menus that can run just about any feature. The package includes all the regular power word processing features - indexing, table of contents, illustrations, bibliography, British spellchecker and thesaurus, outlining and sections - but also does things only DTP packages could manage previously. Structured graphics, IFF and EPS import, with all images scalable, croppable and rotatable; rotatable and movable text and PostScript output to any printer - PostScript or not.

Final Writer comes with over 110 fonts and 100 structured EPS clip art

images, and will cost about \$225. Contact the Australian distributors, Tupsoft, on (02) 482 7040.

One-Stop Music

Blue Ribbon Soundworks, famous for their *Bars and Pipes* and *SuperJam* music software, have branched into hardware production with their new One Stop Music Shop card - the first real sound card for the Amiga! The One Stop Music Shop aims to bridge the gap between the rather cheesy sounding internal Amiga sound and a fully fledged (and rather expensive) MIDI setup.

It offers lots of 16 bit instruments with proper multi-timbral capabilities, giving Amiga composers sound as good as a decent MIDI setup for considerably less, and includes a MIDI interface as well for future expansion.

Tupsoft are distributing this, one, too, for about \$1245, and their tel-

ephone number is still (02) 482 7040.

Head Honcho Quits

Jim Dionne, president of Commodore US and hence effectively the company's Top Banana, announced his resignation at the Commodore Dealer Meeting at World of Commodore in Pasadena. Commodore is now trundling along perfectly happily without a president, and Jeff Stiley is the new General Manager. Dionne's resignation was not an acrimonious one; he'd been in charge for quite a while and evidently felt like a change.

Toaster Power for PAL

The wonderfully named Warm and Fuzzy Logic, Inc, have come up with a hardware device for any Amiga that lets you use the Video Toaster's powerful *Lightwave* rendering software. The module, Lightrave, emulates all

AMIGA 600 1Mb Ram expansion card Battery/Clock/On-Off switch \$99	AMIGA 500 512kb Ram expansion card Battery/Clock/On-Off switch \$69	A500/A2000 BUDGET ACCELERATORS 68030 25MHz \$395.00	BLANK FLOPPY DISKS BOX OF 10 DISKS \$7.50 10 BOXES \$72.50
2Mb Ram expansion card Expandable to 4MB Battery/Clock/On-Off switch \$285	4Mb Ram expansion card Battery/Clock/On-Off switch \$395	PHILIPS COLOUR Monitor \$299.00	
MIDI CONNECTOR AND CABLES \$119.00	AMIGA QUALITY MOUSE \$39.95		EPSON canon CITIZEN CALL US LAST FOR BEST PRICES
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ROCHARD 120Mb for A500 External A500 hard drive expandable to 8Mb RAM \$695.00		AMIGA REPAIRS FREE QUOTES FAST TURN-AROUND PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE.	
SHADOW SOFTWARE Shop 2, No. 5, VICTORIA ROAD PARRAMATTA NSW 2150  (02) 630 0558			

of the Toaster functions needed by *Lightwave 3D*, renders faster than a Video Toaster system, outputs to most 24 bit graphic cards and, most importantly, works fine on PAL machines.

Lightrave lets you play Toaster-4000 style preview animations on any machine and stores them in standard ANIM format. It works with just about any network. You can also render straight to ImageFX for image processing before saving.

Like all renderers, *Lightwave* is happiest with a big, fast machine, and early reports say Lightrave's not quite bug free, but \$US499 for the hardware is a pretty good price.

Australian distributors have been tied up in red tape by NewTek, makers of the Toaster, but a local distribution deal is by no means out of the question.

Warm and Fuzzy Logic can be contacted at 2302 Marriot Road Richmond, VA 23229.

TypeSmith Updated

Soft-Logik have announced a new version of *TypeSmith*, the outline font editor. *TypeSmith 2.0* can load, save, edit and generate bitmap screen fonts. For the first time, users can create bitmap fonts from scratch manually or choose Generate Bitmap to automatically create a bitmap version of an existing outline font.

TypeSmith also includes hinting, which makes fonts look better at low resolution and at smaller sizes, and can trace a picture, or of course a scanned typeface character, automatically. Just load a picture and choose the Autotrace command.

TypeSmith 2.0 costs \$US199.95. For more information, call Amadeus on (02) 652 2712.

Studio 16 V3

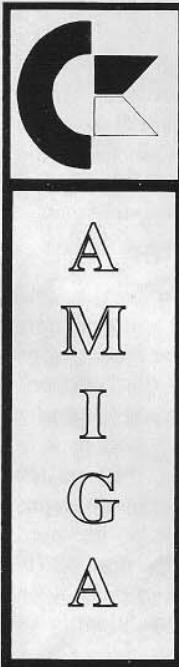
SunRize Industries has released ver-

sion 3.0 of *Studio 16*, its hard disk sound recording and editing software. The package now features a timeline based cue list for easy mouse driven operation.

Other new features include automatic fades, cross fades, mixing, Punch In and Punch Out, external MIDI mixer support, SMPTE chase, assignable tracks, and multiple digital audio card support. *Studio 16 3.0* is shipping with both of SunRize Industries' 16 bit digital audio cards, the AD516 and the AD1012, which are being used for many professional video, film and audio applications.

The *Studio 16*/AD516 bundle costs \$US1495, while *Studio 16*/AD1012 combination costs \$US595. Upgrades to *Studio 16 3* will be free for people who purchased *Studio 16* since the first of June 1993. All other upgrades will be \$US249.00. Contact Sunrise Industries at 2959 S. Winchester Blvd., Suite 104, Campbell, CA, 95008.

If you feel lost, helpless and confused,
Just follow this signpost!



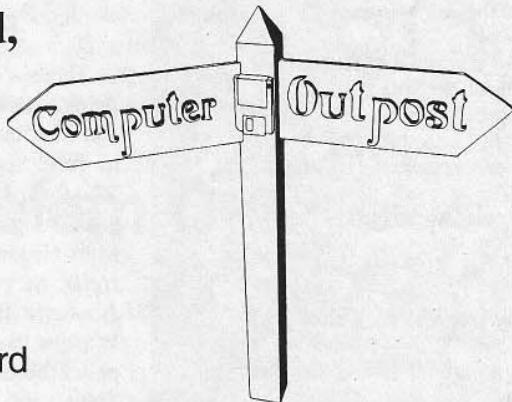
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Blitz2 is fast becoming the most popular language for developing programs on the Amiga computer. Featuring an integrated editor/compiler, Blitz2 produces fast, compact, standalone programs quickly and easily.

- A complete extended BASIC command set including procedures, Select..Case, While..End flow control
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- New types ala C Structures making Blitz2 more than just another BASIC
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- User magazine featuring tutorials, updates & heaps of new commands, every 2 months!

For applications Blitz2 features:

- Standard Amiga screen, window, menu & gadget management commands
- Powerful user interface generator
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For arcade-type software:

- Superfast Blitz-mode which cleanly takes over the Amiga OS
- Silky smooth hardware slice control
- AGA support for leading edge games

No other programming environment on the Amiga gives you such complete access to the Amiga's potential in such an integrated, friendly manner.

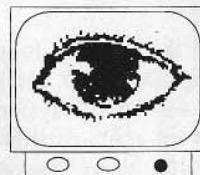
For more information about the power of Blitz2 including a free demo disk call, write or fax us:

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Media Watch



In the tradition of Ram Rumbles, spotings of our favoured machine continue to rate as the most popular topic of all our reader mail. So, herewith another instalment of Media Watch, our regular look at Amigas in the lime-light.

Jurassic Park

Monte Boyd of Cremorne, NSW was the first of several to discover that Amigas were used in the making of *Jurassic Park*. Don't get excited, all the graphics you see on the big screen are done with monster Silicon Graphics workstations, but a humble Amiga was indeed used for animation storyboarding - roughing out animated scenes.

Famous list

There's a list circulating of famous Amiga users, which is much too long and in some parts trivial to reproduce in full. Some highlights, or People You Probably Never Knew Used Amigas: Andy Warhol, Arthur C. Clarke, Matt Groening (*The Simpsons*, *Life In Hell*), Steven Spielberg (well, if the *Jurassic* thing counts I suppose), Warner Bros, Will Wheaton (who plays the odious Wesley in *Star Trek TNG*), ZZ Top, a whole load of US stadia for in-game displays, Ford Motor Co in their assembly plants, the MacWorld expo (ha!), *Babylon 5*, *City Slickers*, *Aladdin*, *Hot Shots*, *Part Deux*, *Max Headroom*, *Total Recall*, various Australian airports, Virtual Reality (of course), 900 NBC TV stations in the US - the list goes on. Thanks to David Tiberio for compiling the list!

World at Noon

Travis Cunningham of Echuca, Victoria, managed to spot not an Amiga

but a C64 on the *World at Noon* show, during a segment on a device to automatically disconnect a machine's power after a set time. He also spotted an ad for the CD32 - unfortunately as you suspected, Travis, that doesn't count!

C128!

Stephen McGovern of Moorooka Qld came up with a few sightings. A C128 at his local print shop doing the accounts (heck, it might be old but it still works). In the Australian movie *Takeover* a computer company boss gives his son a Commodore PC with an Amiga monitor. In a music clip for a band whose name escapes him, Stephen spotted a 2000 controlling the graphics (can't miss that red pointer). In an Arnott's Shapes ad there's a flash of a 1084 with what could be a 500 and a Commodore mouse. Not a bad collection, Steve!

TVTV

Darren Oster of Vista, SA, spotted an apparently keyboardless Amiga 2000 hooked up to a small portable TV on the ABC's *TVTV*, in the studio of the new cable station Metro-TV.

Stepfather

Steve Muller of Wulkuraka, Qld spotted a few, too, but unfortunately only one was new. In the recent video release of *Stepfather III* the "stepson" played a detective mystery murder game on his A500 and also used it with a modem to get into police records. By taking instant photographs of television screen shots he then used a camera type scanner to digitise (in colour) the picture and overlay it on another to show the true identity of his "Stepfather".

AMIGA CD³²TM

Technical Specifications

Product	Amiga CD32
Clock Speed	14.19MHz
Processor	Surface-mount Motorola 68EC020 microprocessor
Custom Chips	AA multichip coprocessor system for video, graphics, sound and DMA
Chip Memory	2Mb 32-bit RAM; as standard
EEPROM	1Kb non-volatile memory for high-scores and game position saving
ROM	1Mb
External Interfaces	Game controller/mouse/joystick (DB9 male, two) Aux connector to both keyboard and highspeed serial port Colour composite video RF modulator and S-video Right and left stereo audio phono connections
Internal Drive	Dual speed CD-ROM drive transfers data at 150Kb and 300Kb per second
Video Display	Output type: colour composite; RF modulated; S-video interlaced and non-interlaced; up to 8 bitplanes
Graphic Modes	AA custom chipset produces resolutions ranging from 320x200 to 1280x400 (more with overscan, including 800x600). Colour palette of 16.7 million colours. 2 to 256,000 user definable colours displayable on screen
Sound	Four channel stereo sound, 8-bit D/A converters, 6-bit volume and CD-audio
Power Supply	23 watts, switching
Dimensions (WxHxD)	Approximately 311mm x 81mm x 212mm

OSCAR

The game scenario is set in a multi screen cinema complex where Oscar can enter any of the Magical Film Worlds. CD-Audio Soundtrack. Video Sequence Intro. 256 colours AGA.



- | | |
|--------------------|--------------------|
| Cartoon Capers | World of Commodore |
| Wild West World | Children's Matinee |
| Game Show Bonanza | |
| War Games | |
| Prehistoric World | |
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DIGGERS

A GAME OF CUNNING, MONEY MAKING AND SUBTERRANEAN ADVENTURE.

You've just arrived on Zarg, you've got one month to mine yourself a fortune. The only problem is which race of unruly Diggers are you going to choose? Fabulous treasure and amazing discoveries await the successful few. Specially produced for the Amiga CD32.



- Four races to choose from with distinct character traits
- Masses of undiscovered treasure to be found
- 34 huge levels to explore
- Over 1 million locations to mine
- Break the Zargon bank
- Animated sequences
- Fantastic CD digital soundtrack and voiceover
- Over 370 megabytes of action packed adventure
- Incredible 256 colour graphics
- The game contains a sophisticated Zargon Guide Book
- Sounds good, well what are you waiting for? Get DIGGING!

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Commodore

Letters TO THE EDITOR

Late arrival

Dear Editor, On Friday afternoon 10th September my ACAR magazine arrived in my letterbox. On Tuesday 14th September (two shopping days later) I rang Sigmacom regarding their advertised A500 trade up to A1200 offer of \$795.

I was told they were temporarily out of stock and asked to ring back in two days. When I rang back I was told the offer had been withdrawn and I could buy a 1200 without trade up for \$995.

Due to the late arrival of ACAR and Sigmocom's failure to run their A500 trade up deal till the end of the month (as advertised) I, along with many more subscribers who received late deliveries, were never at any time in a position to take advantage of Sigmacom's A500 trade up deal.

When subscription time comes round again, one must look closely as to whether or not to purchase a magazine which arrives too late to take advantage of its advertised content. Is there a valid reason why a magazine cannot arrive on the first of the month?

*S L Hawtin
Whiterock, Qld*

Ed: The September issue of ACAR was posted on 27th August. Sigmacom say their advertised trade-in offer had a limited time period for a number of reasons - the \$200 rebate offer from Commodore ended, and the ad is placed approximately six weeks before publication which makes it hard to predict stock availability from Commodore.

Buying overseas

Dear Andrew, One or two comments on the issue recently raised in these columns regarding buying overseas. I feel

we need a balanced approach to this matter. Most of us are not business software buyers, but hobbyists, and costs are top priority. My personal experience over the last seven years has been that overseas companies (I have bought mainly from USA) try very hard to do the right thing by me, and I cannot fault them in this. I mostly get hardware/software that has been hard to obtain here, and also on occasion when the prices have been too good to pass up. The delivery times have been similar to other readers' experience - usually within the month or six weeks. On several occasions when I paid for goods that were in fact no longer obtainable, I had no trouble getting a refund on my credit card. The only thing I would say (apart from the obligatory 'buyer beware') is that I always got the best service when I rang up - and this was fairly inexpensive since I got right to the point.

At the same time, I have bought even more hardware and software from local (usually SA) dealers when that has: i) been reasonably price-competitive and ii) suitable to my needs. Once again, their service was usually very good, and once again, if there were problems I got the best service when I used the phone rather than writing letters.

Now, local dealers could possibly improve their share of this market, but the extra effort and money may not be worth the returns to them.

In other words, there's a place for everybody in what is really a global marketplace. That's the reality that buyers of computerware make use of all the time.

Briefly on to another matter: Good news for C-128 and C64 users! As Owen James has already mentioned in his column, Australia has another news source

for this never-say-die user-group. This is *Commodore Network*, which I subscribe to and find quite enjoyable.

From the US there are three magazines still going strong, in *Run*, *Compute Gazette*, and finally the resurrected *Twin Cities 128*. I also subscribe to these and can recommend them.

Twin Cities 128 is also out in C64 form, published by Parsec. Any readers who may have queries on this very enjoyable magazine are welcome to write to me. Any questions that I cannot answer will be forwarded to Parsec.

*Alex Przybylski
Aberfoyle Park SA*

Ed: The main reason for higher prices in Australia, besides exchange rates, shipping and intermediate ten-percenters, is that our Amiga market is far smaller than that of the USA or Europe.

When you sell a lot more, you can afford more staff, ship in larger quantities and pare back your margins, resulting in better service and lower price.

Local retailers make up for this with the much easier product support that comes from being 10,000 km closer to the customers. Of course this is a generalisation, but swearing off local distributors or, conversely, sticking like glue to domestic retailers are both bad strategies.

Which modem?

Dear Andrew, I have been thinking about buying a modem after I have saved up enough money. I was wondering if you could advise me on which one to buy. Like should I buy a 2400 to start with then buy a faster one, or should I keep saving until I can afford a 9600 or 14400 straight off? And how much would a 2400 cost, compared to say a 9600? This information would help me very much.

*M Gallienne
Adamstown*

Ed: A second-hand 2400 baud modem won't set you back more than \$150, and it's fine for message reading and posting. If you don't want to spend ages transferring files, though, (2400 takes 75 minutes to send a 1Mb file), at least 9600 is a better idea. Second-hand 9600s are going for around \$350. There aren't a lot of second-hand 14400 modems around yet, so you're looking at at least \$550 for a new one.

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**Everybody's talking multimedia revolution.
Allow us to light the fuse.**

A lot of apples were bruised when we first introduced Scala, the professional presentation package. With the new Scala MultiMedia MM200, they will be blown into oblivion!

Let us introduce a few of the features that make Scala MM200 combined with the Amiga the world's most powerful multimedia environment:

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A revolutionary new plug & play system, for the integration of laserdisk, still video, MIDI, or CDTV sound in your Scala presentation. Extra EX'es, such as 24 bit graphic support and VCR control are also available.



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More than 80 amazing, smooth and professional transitions provide possibilities previously unseen on the Amiga.

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Enhance your presentations with voice-over, music and special sound effects! Scala offers total control of recording and play-back.



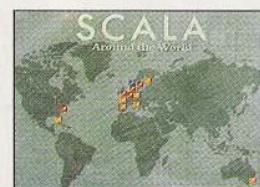
The Scala main menu.



Scroll text by Scala.



The Scala edit menu.



It's a Scala world!



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With this bonus program you can make your animations play up to four times faster!

The press writes:

"The word multimedia has been battered and misused... Scala on the other hand, know exactly what multimedia is and what to do with it!" *Amiga User International (UK)*

"...the best program in show business." *Amiga Format (UK)*

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Scala MM200

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For a close look at the market leader in multimedia software, contact your dealer today!

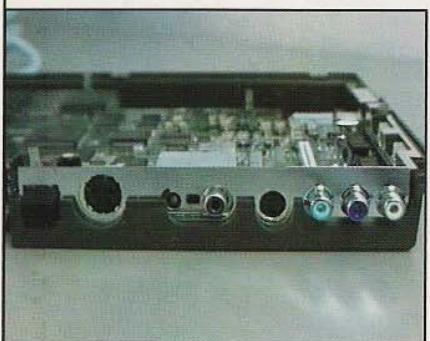
SCALA
Why make it harder?



Opening title screen



Two game controller ports plus the mysterious AUX connector



Left to right; Power RF Mod, Y/C, CompoFit video and stereo audio



Underneath the lightweight Sony CD Rom drive

AMIGA CD 32

An in-depth look

by Andrew Farrell

Commodore have delivered CD32 in Australia, whilst the RISC powered Atari Jaguar and expensive 3DO consoles remain but a promise. Will CD32 cut it as the next games console king?





Full AGA bundled game - review on page 74 and 75



New VLSI chip handles I/O plus conversion from PC to Amiga graphics



The game controller doubles as a remote for the CD player

There is no argument that CD is the way of the future. Multimedia entertainment offers dramatically more scope than software restricted to the limited storage of floppy or hard disk. As an added bonus, at the moment it's also very hard to pirate.

Software companies have dreamed, planned and now created programs to take advantage of the mass storage of CD. They've explored the potential of combining digital video and sound with computer images - and to go beyond with the addition of Virtual Reality head sets, power gloves and the like.

With the dramatic rise in popularity of multimedia for IBM compatibles, and the new direction of game consoles toward CD, it seems Commodore are heading the right way. Will they succeed?

History

CDTV was not quite as successful as some may have hoped. Likewise CD-I has found consumers are not quick to accept the idea of interactive multi-

media players which look like a cross between your CD player and the family VCR.

The step back towards a console style delivery is a smart move. However, in doing so, Commodore face two problems.

“a fabulous games console”

Firstly, they're taking on the two giants of the video game world - Sega and Nintendo - both of which have their own commitments to CD-ROM. Fortunately Commodore has the advantage of superior technology.

The other problem is the undeniable impact on the computer range of positioning the Amiga name more closely

with the very games image Commodore has tried so desperately to shake. Furthermore, everything CD32 has to offer which makes it more like a real computer is lost in the console style delivery. Interactive multimedia encyclopedias are probably the last thing on the mind of your average console buyer.

From another view, all this is perfectly logical. It is widely known that the Amiga 500 is an excellent games machine. So, presumably an Amiga console would ride on the crest of an already excellent reputation in this arena, particularly in Europe. Early reports indicate sales of CD32 there are strong.

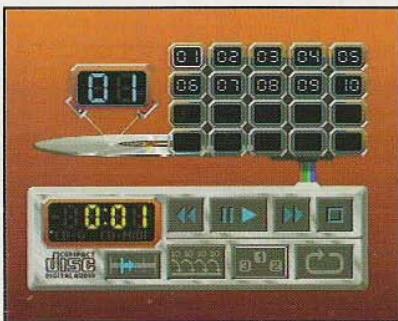
Australia is a different market, a tricky and fickle place influenced by a combination of American and European culture, great weather and a degree of isolation. Downunder, Sega and Nintendo have long ruled the games console market. The Amiga games market on the other hand has been a little slow in recent times.

In many respects, the Australian Amiga community has become more like

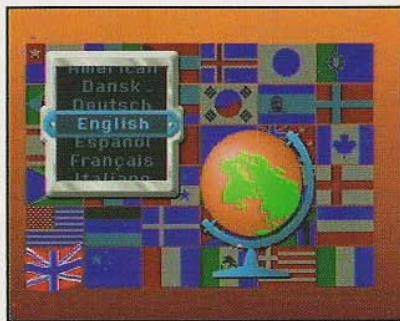
Saved games and high scores may be kept

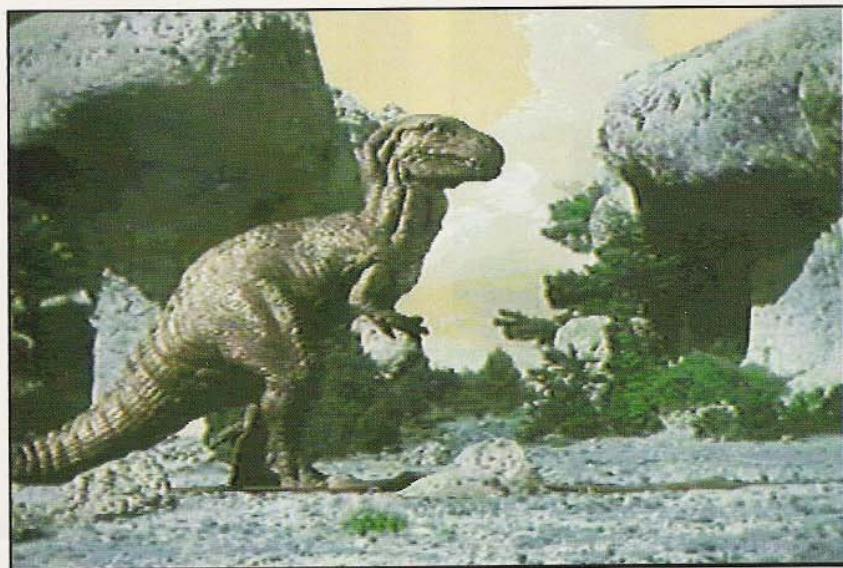


Controlling an audio CD from your television



Multilingual support - ready for Europe





*Promising graphics on the demo
- but titles which take full advantage of CD32 are still vapourware*

the USA, where the Amiga continues to grow as a powerful force in niche markets such as Desktop Video, Multimedia, Graphics and Animation and of course, the power-Amiga-user - people who want Amiga for the sake of having what they consider to be the best computer platform for the money on the face of the planet.

No doubt these sorts of Amiga fans will be keen to read about a CD32 compatible drive for their existing hardware. You see, unlike CDTV, there's no way

to connect CD32 to your existing Amiga. You cannot PARNET your way to CD32. There are no standard serial or parallel ports to speak of.

Amiga CD32 is strictly a stand alone unit - until the arrival of the as yet unannounced docking bay. This is a games console, through and through.

Hands on

Our review CD32 unit arrived well after the console started shipping in Aus-

tralia. Right now you can probably buy a CD32 at most major retail stores. Specialist Amiga resellers also have stock. This allowed us the opportunity to get feedback on public interest, and also to gauge who was buying CD32. Although reports at this stage are purely anecdotal, it appears early adopters, potential Sega-Mega Drive owners and of course, die-hard Amiga heads have been the main consumers.

CD32 comes in a serious looking box. The word Amiga is emblazoned all over the place, as well as that powerful number - 32. That makes the Amiga console 16 bits better than Sega or Nintendo, but 32 behind the 64-bit Jaguar, which at this time nobody has laid eyes upon. Some of the features listed on the box would probably only make sense to computer freaks. Others are clearly there for the game console buyers. It's a reasonable mix, and overall, it all looks pretty smart.

Inside you'll find one CD, containing two games. There's no startup disc, unlike CDTV, however retailers have access to an excellent demo disc. It doesn't seem to make sense that Commodore chose to leave this disc out. Not only does it contain four great demo games, but there's also some very good demo graphics, CDXL (which is now 4096 colours 2/3 screen, at about 15fps) examples and a *VistaPro* flight - all of which add up to some pretty good pose value. No doubt many CD32 owners

Without the MEG module this is how CD32 digitised video looks



Ask your dealer to see the full demo disc



would sell many more units to interested friends if they were armed with this disc. Commodore, please put it in every unit.

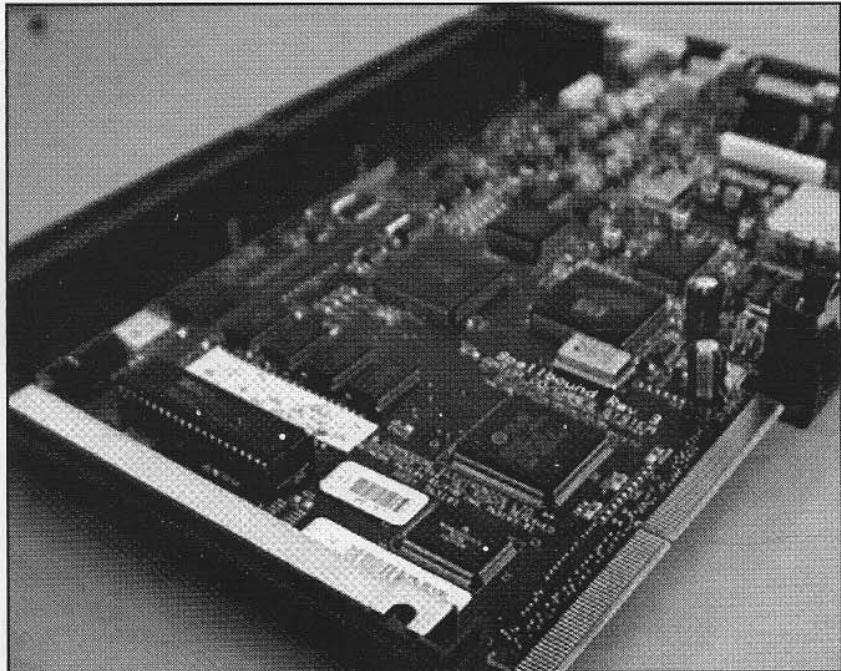
Apart from the player and controller, there's also a separate power pack, and some light documentation. There's no list of available titles, and in an additional consumer information booklet there are warnings regarding phosphor burn-in and epileptic seizures. Some sort of guide as to what CDTV titles work on CD32 would have been handy. Hopefully one will appear in time.

The hardware

Amiga CD32 has unusual lines, with a combination of the square early eighties look, and the rounded nineties. The joyports are located on the side of the unit - a location which I found rather strange given the usual placement of a console beside the television. Placing them on the front would have made more sense.

On the front of the top panel there is a reset button, which my two year old daughter found great delight in pressing when I was in the middle of testing a game. There's two lights indicating power and CD disc activity, along with a headphone volume control and socket.

At the rear you'll find the large expansion port, designed for the MPEG video module and hopefully a future docking station. The power switch is a



Essentially an improved upon Amiga 1200 without some of the extras for peripherals, the PCB looks clean and neat

small rocker type and the power plug a five pin DIN style connector.

For connection to your television you have the choice of composite video, Y/C or RF. There's also stereo RCA sound jacks and a switch to select between two channels on the modulator.

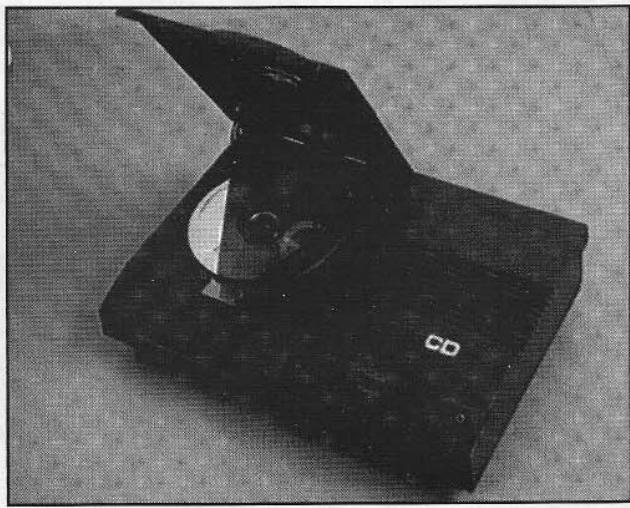
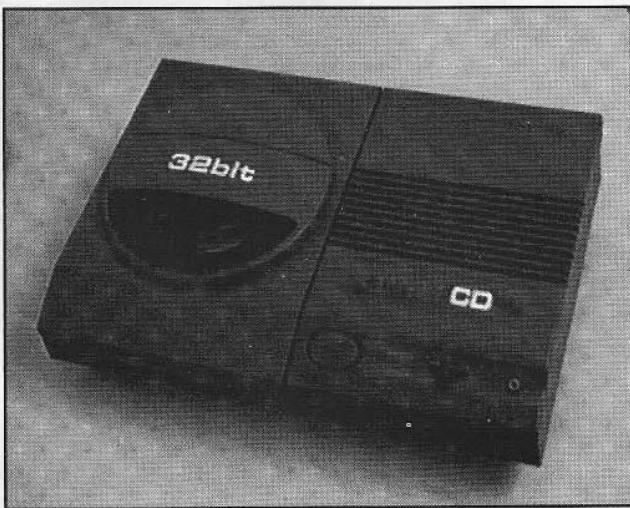
On the left side next to the two

joyports is a mysterious auxiliary connector intended for various purposes. Possible applications include connecting two CD32's for multiplayer games, Virtual Reality controllers and even a keyboard.

CD32 combines the punch of the Amiga 1200, with a double-speed

CD32 is a games console through and through

... but will the hinged lid survive the rigours of the lounge room floor



(around 300K per/second) CD-ROM drive. Together they have the potential to be an awesome combination. The infra-red controller of CDTV has been replaced by a cheaper looking cable connected version. However, despite the dull feel of the buttons, in play the controller is perfectly adequate.

Operation

To start, switch it on, and place a CD in the drive. The flip top lid has a metal hinge which looks like a spare part from an old gramophone. But nostalgia aside, it's a very practical and easy way to load discs. It also appears reasonably robust. You would be hard pressed to insert a CD incorrectly, unlike caddy based mechanisms which are prone to jamming.

There's a fancy power up screen and a number of settings which can be adjusted without a disc in place. These include language selection and the house keeping game information stored in the 100 units of memory - nothing explains what a unit is equal to in real terms.

Music CDs

You can play music CDs on Amiga CD32 in two ways. The hand controller offers all the usual CD player button equivalents. Alternatively, you may use the on-screen menu system. Apart from the usual controls, it's also possible to view various time information relating to the track or CD being played. CD+G discs are supported - as are CD+MIDI, although unlike CDTV, there is no longer a built in MIDI interface. No great loss.

Conclusions

CD32 currently needs three things to succeed.

Firstly it needs to be advertised. As I write this the very first television commercials are going to air.

Secondly it needs unique titles to clearly differentiate CD32 from other platforms - right now the available discs are more of the same, although in some instances they boast slightly better graphics. The promised *Jurassic Park* title would be a good start.

Thirdly, CD32 needs lots of people to buy it. According to US Commodore officials, the Philippines manufacturing plant is pumping out 20,000 units every week. Early indicators look good, and support is being promised.

As in my first reviews of CDTV, I can only add one timely suggestion to Commodore. Roll out CD32 compatible drives for the A1200 and 4000 as soon as possible. Amiga owners won't need convincing to buy the technology, and they will help create a critical mass to ensure software publishers a sizable market.

Finally, when the video module ships (around \$399), CD32 will really cook. I have seen the quality of CD32 MPEG video - on your average colour television it looks about the same as any good video.

There's a strange irony that the very company that saved the Amiga Lorraine corporation by turning their dream games machine into a personal computer has nine years later turned the Amiga back into the very thing that it was originally designed to be - a fabulous games console. □

CDTV Titles Compatibility with CD32

Codes:

J = Joystick compatible (though not needed)

M = Needs mouse (plugs straight in)

K = Needs keyboard (A4000 or CD32 keyboard plug in)

D = Needs keyboard and disk drive

R = Keyboard and disk drive recommended

S = Slight sound fault is evident.

Educational:

A Bun For Barney	M
A Long Hard Day At The Beach	J
Asterix French For English 1&2	K
Asterix English For French 1&2	K
Barney Bear Goes Camping	M
Barney Goes To School	M
Cinderella	J
Fun School 3	J
Heather Hits A Home Run	J
LTV English	M
Moving Gives Me A Stomach Ache	J
My Paint	M
North Polar Expedition	J

Scary Poems For Rotten Kids

J

SJ

Tale Of Benjamin Bunny

J

SJ

Tale Of Peter Rabbit

J

Thomas' Snowsuit

J

Entertainment:

Air Warrior

K

All Dogs Go To Heaven

M

Asterix And Son

K

Battlestorm

J

CDPD 1, 2 & 3

RM

Defender Of The Crown

J

Demo Collection 1

RM

Dinosaurs For Hire

J

Fantastic Voyage

J

Fractal Universe

M

Global Chaos

J

Hound Of The Baskervilles

M

Pandora's CD

RJ

Prehistorik

J

Psycho Killer

SM

Sim City

J

Snoopy And The Missing Blanket

J

Tie Break Tennis

J

Town With No Name

J

Trivial Pursuit

SJ

Xenon II

SJ

Arts & Leisure:

Advanced Military Systems

J

Animals In Motion

J

Connoisseur Of Fine Arts

J

Gardenfax: Fruits And Vegetables

M

Gardenfax: Indoor Plants

M

Gardenfax: Trees And Shrubs

M

Guiness Disk Of Records

M

Women In Motion

M

Musicolor

M

Reference:

American Heritage Dictionary

J

Illustrated Works Of Shakespeare

M

Dr Wellman

M

Illustrated Holy Bible

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Business:

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D



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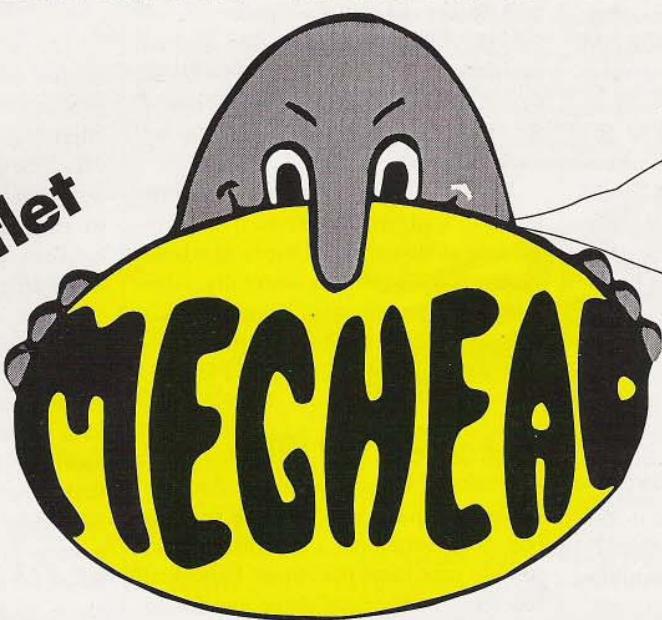
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Affordable Tape Backup: SCRAM + Tamberg

by Jeff Wilson

With the purchase of the A4000 computer, it became necessary to have a streaming tape backup system. This is because backing up onto disks would not only be time consuming but also costly, with 200 disks tied up if I were to maintain a two stage backup.

Not being blessed with rich parents or a recent win in Lotto, I needed to find a cheap solution for my backup requirements and quickly, as I was living on borrowed time with my hard disk having no form of backup.

I enquired what others were using, and a couple suggested the SCRAM 16 bit 2000 SCSI controller which was non DMA and although 16 bit, very fast. I had met Mark Ireland at the 1993 World of Commodore show where he was selling the SCRAM range of products. I found out that the SCSI card that I required came in three configurations. Although the kit option was cheaper at \$229, my only real option was to go with the assembled version as my soldering ability on anything smaller than a drainpipe leaves a lot to be desired. At only \$289, a little more in cost, the assembled unit was ready to run.

As the SCRAM board came in under the cost of a A2091, was locally built and supported and was actually available, unlike the A4091, it was the logical choice. The local support was an added bonus, as my subse-

quent questions have all been addressed with some of the best service I've seen from any company.

The right source

Computer Affair of Willoughby advertise secondhand but reconditioned streaming tape drive units, so it was to them that I trekked with my small budget. They had two models available which worked with the Amiga, the Archive Viper and the Tamberg TDC-3600. The Tamberg unit looked like it was made for the Amiga with a little door that opened up in the same colour (well nearly the same colour!) and when closed wouldn't allow excess dust to be sucked into the machine.

I was allowed to take both units home to trial, which proved most convenient as this allowed me to test both units prior to mounting internally. Also this made contact with Computer Affair much easier, allowing me to return the unit which I favoured less.

On the job

I started testing with the Archive Viper and made two backups in various configurations, but initially had trouble with large partitions. I checked the setup of the hard drive and found reselection to be enabled. I set about to turn reselection off and failed to

read the manual first, corrupting my harddrive beyond all recognition.

At first I just looked at my machine in dumb silence, cursing myself for not looking at the manual first and my overall stupidity. Then it dawned on me that I had in fact managed to make two backups of the system. I prayed that my previous work had really succeeded and went ahead repartitioning and formatting the harddrive ready for the restore. I loaded Ami-Back and proceeded to build an index file ready for the restore.

The restore went ahead without any further trouble and then I went on to produce two more backups on the Archive Viper with the reselection turned off. I next disconnected the Archive Viper and connected the Tamberg unit in its place. Once again I ran two backups of the system without any noticeable problem.

There was one cosmetic problem that caused a little heartache until I found the workaround for it. This is the error message that appeared whenever I used a new tape or one that I had just erased. The error message that appears is one that should never be seen with a tape unit as it refers to a worm type unit (this is a Write Once Read Many device). The fix for this error, as it is only cosmetic, is to select the ignore button on the requestor and the backup proceeds normally.

Also, I only own one 250 meg tape but failed to manage a backup on it from either unit. This could be the tape itself or the tape units in combination with the SCRAM card, I don't know as I have no plans to use a 250 meg tape and the 150 meg and 60 meg tapes work fine. I would like to mention that the programmer from SCRAM is working on both these bugs and the one mentioned below, which may not be his problem but nevertheless he is looking for a fix.

The problem just mentioned is when I use *Pagestream* to send a page/ pages for faxing through GPFAX the machine goes into a recoverable alert that is continuous until the machine is reset. This is on a 4000 and I'm not sure whether this problem would occur on other machines. Also this is not a great problem as there is a switch on the back of the SCRAM card that allows it to autoconfigure which when turned off is effectively disabled allowing the programs to work fine. I now only turn it on when I would like to use the streaming tape unit and turn it off on completion.

Final thoughts

By using the SCRAM 16 SCSI card and Tamberg streaming tape drive combination, I have peace of mind for under \$700, which is less than the cost of a new Archive Viper drive. Although the Tamberg tapedrive is reconditioned, it still comes with the standard three month warranty. Consider the fact that even with today's good prices on floppy disks it still would require 120 disks per backup and a minimum of two backup sets. This would lead to a cost of at least \$192, not to mention the time taken up by doing a complete backup.

Computer Affair can be contacted on (02) 417 5155, and MegaMicro, who deal through mail order, can be reached on (02) 484 4275. Alternatively obtain both items through Computer Affair, who can supply the SCRAM Card also in either kit form or ready to roll. □

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Removable hard drives

Bernoulli Multidrive vs Syquest 105

Removable mass storage is a must for serious animators, desktop publishers or power users in general. Two new offerings are now available which offer increased performance and storage. Daniel Rutter puts them head to head.

A while ago now I compared the then new 20Mb floptical disk drive with the Syquest 44Mb removable hard drive. They were priced about the same, and the Syquest won hands down. It held more and worked faster, and that's the bottom line.

Syquest drives are commonplace on all sorts of computer systems, and the distinctive 44 and 88Mb 5.25 inch cartridges are used for backups, transfer of large files between machines and general storage of data that isn't needed often enough to justify putting it on the built in hard drive.

If all you need to do is backups then a tape drive will cost you less per megabyte, but it's useless for general storage. Removable hard drives give your system functionally infinite high-speed data retrieval, and so have become quite popular despite the considerable initial

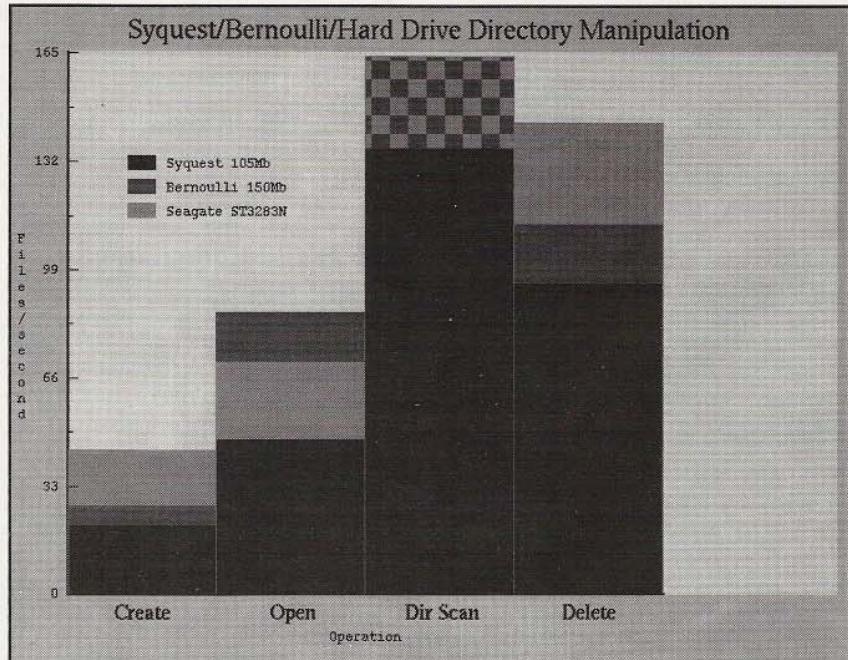
price premium for the more elaborate hardware.

Syquests started at 44Mb per cartridge. Then came the 88Mb in the same format, and drives that could handle both types. Now Syquests have evolved further, with the neater 105Mb 3.5" drives emerging. These are, of necessity, completely incompatible with the previous models, and a fair slug more expensive; around \$1500 with one car-

tridge. For comparison, a high quality 240Mb non-removable SCSI-II drive will set you back less than \$650.

Until recently, it seemed that this new Syquest, despite its price tag, would be very successful. Unfortunately, a dark fin is slicing through the water towards it, and that fin's got Bernoulli written on it.

The old Bernoulli Box removable drives sold about four years ago for



about \$2000, if you were lucky, and had 20Mb cartridges. At the time they were the best you could get in removable random access storage.

Since then they've developed, with storage going up through 35, 65, 90 and 105Mb stages and finally reaching the current 150Mb cartridges. All of them are 5.25" in size, but look more like a fat floppy disk with a metal door than the sexy see-through Syquest cartridges.

Fundamental differences

Looks aside, though, Bernoulli storage beats Syquest handily. The patented Bernoulli system uses a completely different technique from the Syquest, which makes it much tougher.

Syquest cartridges are, essentially, hard disk platters in a plastic box. They're made of metal, very rigid, and reasonably resilient. They have the same restrictions as a regular hard drive

though; the rigid media and the very close distance the read/write head sits to the surface to operate means that a decent knock to a Syquest in action can cause irreparable damage to disk and, if you're unlucky, head. Likewise, if you drop a Syquest cartridge not in its protective box onto a hard surface you've got a good chance of stuffing it up permanently.

Given that a lot of Syquest cartridges go on the road a fair bit for shipping files between machines, this is not good. It doesn't happen often, but it does happen, and once is too often for most people.

The Bernoulli disks work quite differently. They're made of flexible plastic, just like floppies only bigger and to far smaller tolerances. When the disk spins, which is very fast indeed, centrifugal force straightens out all the ripples and brings the disk surface up to the head, which tracks back and forth like a floppy disk's head, rather than using the swinging arm design of the

Syquest and just about every other hard disk. If the Bernoulli gets thumped, it reduces the spin speed of the disk, and gravity causes it to droop safely away from the head.

So serious bumps or vibration can make a Bernoulli disk produce temporary errors, but it's just about impossible to damage the data without physically smashing the device.

This ironclad toughness is reflected in the warranties for current Bernoulli equipment - two years on the drive, and no fewer than five on the disks.

Handleability!

Physically, the Syquest is more elegant. The cartridge is both smaller and better designed than the old five inch units, and the drive has a smart eject function, so it's no longer possible to pop the cartridge out during a write and utterly stuff most of your data, not to mention your drive. The Syquest we tested came in a very groovy looking



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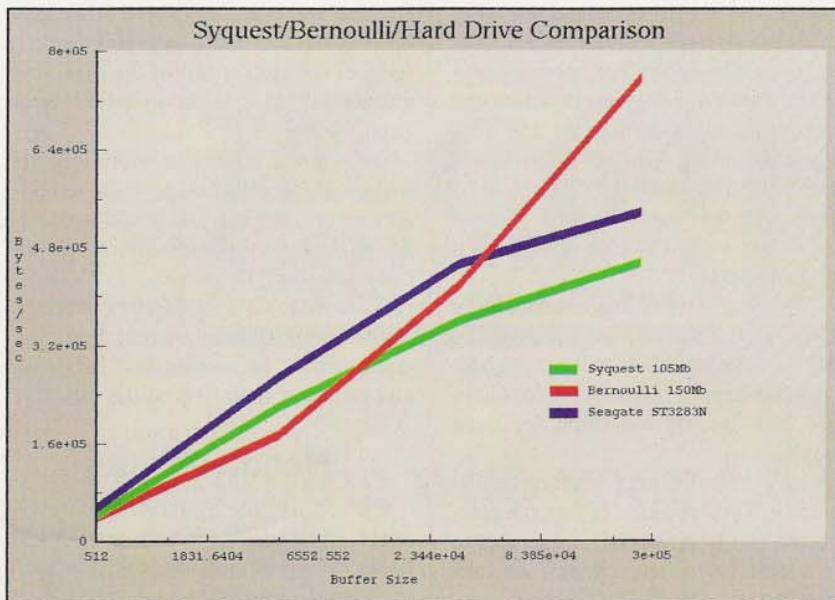
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HARDWARE COMPARISON



rounded Maxima case, but there are other versions.

The case for the Bernoulli is one of its strong points. It ain't arty, but it's functional, with a pop-out carrying handle and, impressively, a SCSI terminator switch, so you don't have to plug in stupid terminating connectors (bad) or open the thing (much worse) whenever you need to change its termination, which as a portable device you'd probably do fairly often.

The Bernoulli handles its disk rather differently from the Syquest; for a start, when you stick the disk in a couple of centimeters of its case stay sticking out for you to grab when you remove the disk again. Before you ask, the Bernoulli won't let you take out a spinning disk either; there's a spin down button which makes sure everything's shut off, and then releases a solenoid catch to give you the disk back.

One small advantage of the Syquest is that if you want to get the disk out when the drive's not on you just poke in a paper clip and Bob's your uncle, the same way you do it with Macintosh floppy drives. The Bernoulli makes you pop off a cover and rotate a spindle with a pencil eraser until two dots line up, after which you do the pin-in-the-hole thing again.

It's not a big difference, and it's offset by the fact that the Syquest's write protect tag is a tricky little thing to move, needing a pen tip and some patience, while the Bernoulli's is a simple sliding plastic button.

Performance

In speed, there's not a world of difference between the two removables and any recent high capacity hard drive. Of course, your mileage WILL vary since drive speed depends on computer speed, controller speed, system load, type of access, file fragmentation, buffer type and size and, many would swear, the phase of the moon. For comparative purposes these statistics are pretty accurate.

The computer used to test them is running a 40MHz 030 board with a GVP Series II SCSI controller. This is only SCSI-I (all three drives support SCSI-II, which can go a lot faster and handle twice as many devices), but no slouch. The tests were done with *DiskSpeed 4.2*, and the transfer results averaged for the line graph. The bar graph shows directory manipulation speeds.

The hard drive I chose for the comparison, mainly because it was conven-

iently plugged into my machine, is a Seagate ST3283N 237Mb unit. It's fast, but not screamingly, and retails for around \$640.

As you can see, the Syquest is a little slower than the Seagate but not by much - the Seagate is partitioned with more buffers as standard. The Bernoulli's unusual design gives it better performance with a large read/write buffer, worse with a smaller buffer. I stress, however, that these reasonably minor differences will not leap out and say hello to you as you use the drives. Remember always that there are lies, damned lies, statistics and benchmarks.

Much the same positions show up in the directory manipulation test - often a better indicator of drive speed than raw transfer rate. The Syquest is always slowest, the other two duking it out for first place. The tasteful chequered pattern at the top of the Dir Scan bar is there because the Bernoulli and my hard drive both scanned exactly 164 files per second.

The Bernoulli model I reviewed is actually one behind the times; the one currently on sale has a small read/write cache built in, which should further improve its performance.

Overall, the Syquest's hasn't lost by as much as the floptical did last time, but the floptical lost by a big margin. The Bernoulli will handle every disk format except the ancient 20Mb; the Syquest does only 105Mb. The Bernoulli is tougher, faster and, in this case, better built. Since both drives, as reviewed, sell for \$1500 with one cartridge, the choice is clear.

If you want an internal drive, the Syquest will set you back \$1400 and the Bernoulli only \$1300. The only reason to get the Syquest is if you MUST have compatibility with other 3.5" Syquests, MUST have a little disk (which is made bigger anyway by its protective case - the Bernoulli cartridges don't need one) or MUST have a drive that fits a 3.5" bay.

The clincher? Well, I'm taking delivery of my Bernoulli in about a week!

Many thanks to CPA - (02) 337 6255 - for the Syquest. Ditto DigiPic Productions - (02) 948 2766 - for the Bernoulli. □

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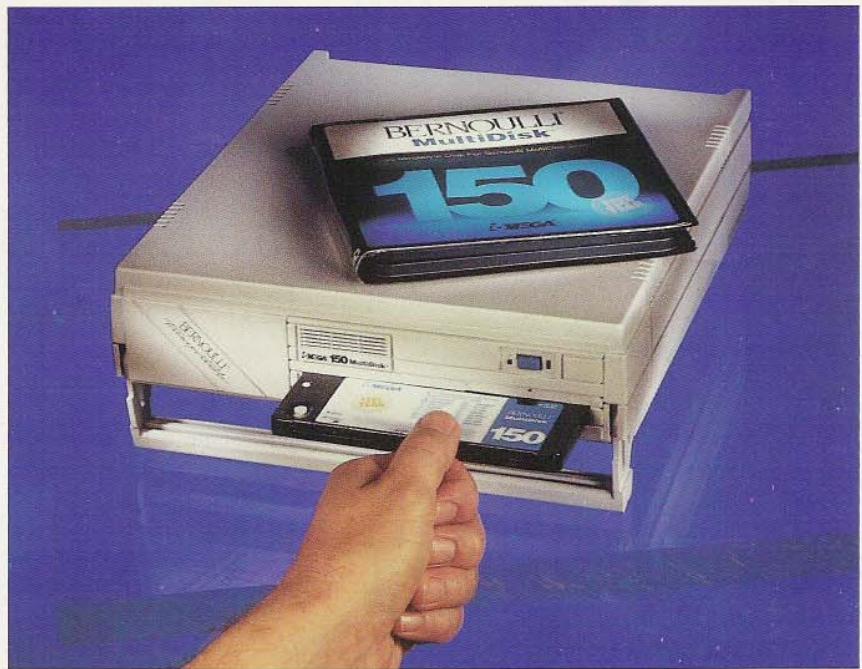
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Plug In Next Generation Graphics

A review of the EGS-Spectrum

By Andrew Farrell

Demand for better graphics has always been a driving force within the Amiga community. From the very moment the Amiga 1000 was delivered back in the mid-eighties, it has always been the graphics capabilities of the advanced Amiga architecture which won the imaginations of animators, artists and lately, film makers. The pilot of *Babylon 5*, the thinking-man's science fiction series created by Warner Bros, recently won an Emmy for its LightWave 3D Amiga animation.

Babylon 5 is now in video stores across Australia, and apart from an above average number of scenes filled with amazing Amiga animated space craft, this TV-movie also features impressive Amiga morphing. Of course, the graphics were rendered onto advanced 24-bit display hardware - in this case the Video Toaster.

With the arrival of the Amiga 1200 and 4000, the opportunity to create photorealistic images has been extended to owners of stock machines. For owners of earlier Amigas, there is a way to upgrade that may in fact end up landing you with even more powerful graphics.

A bevy of 24-bit high resolution display cards have been announced which provide AGA functionality to applica-

tion software. Some even purport to offer the same power promised by Commodore from the AAA graphics architecture of future Amigas.

With names such as Rembrandt, Piccolo, Spectrum and Merlin, the tradition of exotic titles for Amiga hardware continues. I recently tested the Spectrum board from GVP - the company staffed by numerous ex-Commodore engineers with a real knack for extracting that extra ounce of power.

History

The EGS-28/24 Spectrum has been a long-winded affair. Its 24-bit colour and up to 1600 x 1280 displays were demonstrated some two years back. It is not clear what held up delivery, but one would presume they have had plenty of time to get it right.

The card offers many distinct advantages over alternative offerings. The standard Amiga RGB output connects to the Spectrum and is passed through when the EGS modes are not required. In short, GVP have created a one monitor solution - unlike the currently available Rembrandt.

No doubt many will invest in this card because it offers AGA emulation to all screen-mode aware programs.

So, if there is a requester within an application which enables you to choose which screen-mode to operate in, chances are it will work happily with the EGS card. The catch is, the software must hook in to all the standard operating system graphics calls.

If the program hits the hardware directly, talking straight to Amiga's custom chips instead of letting Intuition handle it, the emulation will collapse in a crumpled heap. *Deluxe Paint* is one such program and *Professional Page* appears to be somewhat unstable on anything less than Workbench 3.x.

ImageFX, *Final Copy*, *ProWrite* and *Art Expression* are a few of the many programs that do happily work in an EGS screenmode. Thanks to the EGS Spectrum's own fast Hardware Blitter, there is a noticeable increase in performance in screen refresh and graphics rendering. Furthermore, the EGS has its own dedicated video memory - up to two megabytes. This frees up graphics memory normally used by the Amiga's standard custom chips for other tasks.

Video support

The Spectrum is capable of displaying video resolutions (NTSC, PAL, and

SECAM) as well as workstation-like high resolutions like Next (1120x832). It also adapts automatically to either a Zorro-II (15-bit A2000) or Zorro-III (32-bit A3000/A4000) bus and supports Workbench 2.04, 2.1, and 3.0 to take maximum advantage of its environment. It is also capable of supporting Commodore's RTG graphics standard, if and when it becomes available.

MultiGFX(tm) technology allows multiple EGS-28/24 Spectrum boards to be installed in the same machine, and the device libraries handle all of the necessary details. Multiple applications can be running on multiple EGS-28/24 Spectrum boards, each visible on a separate monitor simultaneously in stunning full 24-bit colour at any resolution.

This is a wonderful news for those who need to see a lot of different things all at the same time. For example, the 3D animator who needs to see a high-resolution wireframe display of the scene being edited, a preview of the

animation in progress, and a control panel screen with all of the needed commands available at the click of a mouse!

Software support

The EGS-28/24 Spectrum system uses the new Enhanced Graphics System (EGS) device libraries. These device independent libraries allow high-resolution, 24-bit software to be written for ANY graphics board that supports these libraries. To date, a number of graphics boards will support the EGS libraries, and all software written for those boards will run on the EGS-28/24 Spectrum.

Likewise, any software written to support the EGS-28/24 Spectrum will run on any of the other display boards that support the EGS libraries. Programmers are no longer committed to a single graphics board; by programming for the EGS system, programs can run unmodified on any display board that supports the libraries.

According to GVP, the EGS libraries were painstakingly checked and rechecked by programmers around the world to make them as close as possible to existing Amiga graphics calls, differing only when necessary to support new features.

This effort was taken to make porting applications as easy as possible for programmers. The EGS libraries also provide some new and very useful additions to the basic array of graphics programming features that native Amiga programmers are used to, for example: Tear-Off menus, Menu gadgets, and more.

Realising that good software takes time, GVP provide a Workbench driver for the Spectrum. This allows Workbench to run on the board in any supported resolution, with up to 256 colours - Workbench limits the colour depth to 256 colours for itself and Workbench-compliant software. Any software that opens its display on Workbench will automatically run on



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EGS-Paint provides a powerful window based environment making it easy to work with multiple images

any EGS-28/24 Spectrum Workbench.

The only restriction is that no direct Amiga Blitter operations be performed by programs running on the EGS-28/24 Spectrum display, since the Amiga Blitter operates on Chip RAM and the EGS-28/24 Spectrum has its own blitter that operates on the display maintained entirely in its own DRAM. (By the way, this means that ALL Chip RAM normally used by Workbench is free for other use.)

Pantograph makes a montage

Running in the native EGS mode, the bundled *EGS-Paint* software is very fast and offers some excellent paint tools. Everything is window based. Even the tool box opens in a resizable window. When you change the size, the tool icons also adjust to fill the space. This makes it easy to use high resolutions of up 1600 x 1280 which normally make the tool icons unrecognisably small.

EGS-Paint also supports tear-off menus. This means frequently used menu options can be pulled down and dragged away from the menu bar, creating a floating menu window.

However, my favourite facility is the Pantograph painting tool. This is slightly more sophisticated than the mechanical device by the same name. Traditional Pantograph devices were used simply for tracing pictures, and with a small adjustment it was easy to enlarge or reduce at the same time.

The digital equivalent works in a similar way. However, it also makes combining one part of an image with another very easy and intuitive. Imagine you have a computer rendered image of a sphere. Perhaps it is placed on a surrealistic landscape. In the centre of the sphere you wish to put an eye, apparently gazing out.

Without the Pantograph tool, this would demand several steps, some of which are clumsy and time consuming. You would probably need to create some form of frisket, position the brush precisely behind the front image on the spare page and then use rub-through mode.

Using the Pantograph tool in *EGS-Paint*, the entire process involves two steps. In any brush selection and draw mode, you begin by marking the source starting point by clicking with the Alt key held down. Then you simply start painting on the destination image. Each

stroke on the destination picture reveals the relative portion of the source.

By selecting the air-brush tool, and blend mode, the result can take on the appearance of a softly montaged combination of two images. This feature is a big time saver and very powerful. Sadly, beyond the other usual functions, *EGS-Paint* is a little light on in the bells and whistles department.

Multiple monitors

The EGS display subsystem is entirely separate from the normal Amiga display. A two-monitor configuration allows the EGS-28/24 Spectrum monitor to display a high-resolution display (from a CAD system for example) on the EGS monitor and the native Amiga output system to display something completely different, and even from a completely different program.

An interesting and extremely useful example would be running a high-resolution paint program in the EGS display while a video application (like the IV24, or OpalVision) runs on the native Amiga display. As pictures are framegrabbed and saved, an *EGS Paint* system can load them in for touchup, while the video framegrabbing continues.

Beyond AGA

The EGS-28/24 Spectrum hardware and the EGS system software take the Amiga platform beyond AGA into the world of truecolour and high-end graphics workstations. If the EGS-Libraries take off, EGS could become a new standard within the Amiga community. The solution is delivered by a veritable giant within the peripheral world, so no doubt it will be taken very seriously by developers. Although AAA is being developed by Commodore, demand for the power boards like the EGS offers is ripe now. Thank you, GVP. Please soup up the paint software and you've got a real winner.

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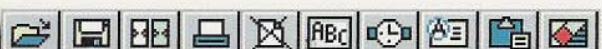
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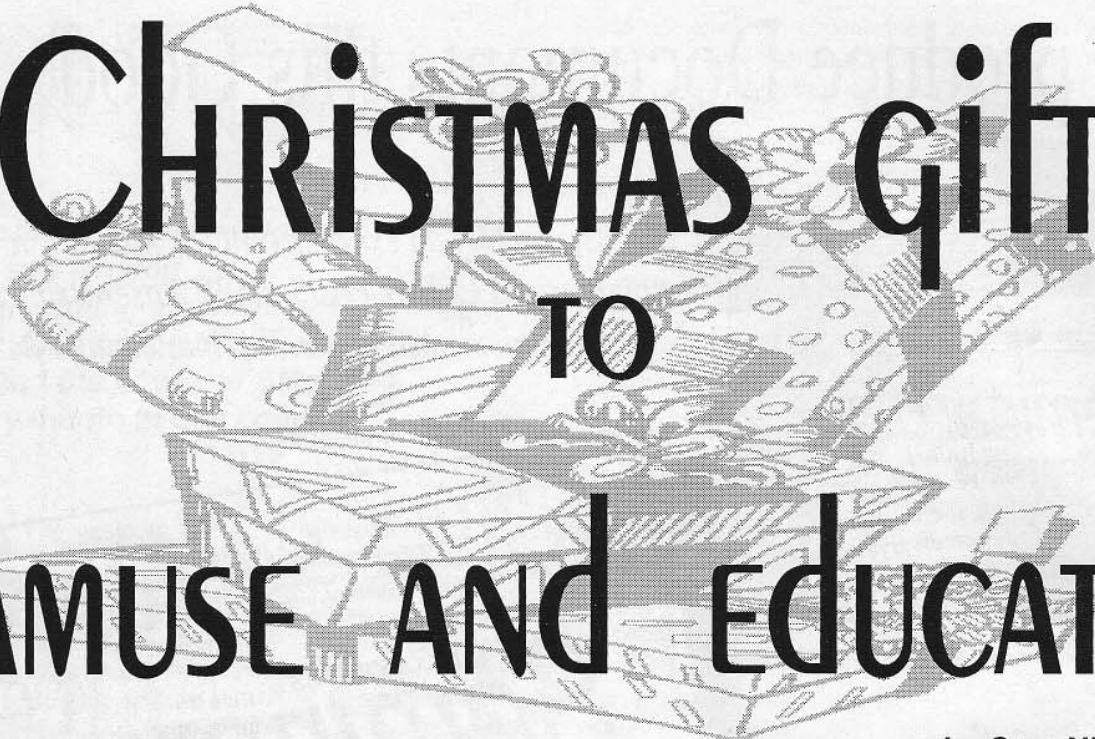
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CHRISTMAS GIFTS TO AMUSE AND EDUCATE

by Stan Nirenberg

Spotting best buys

Yo Ho Ho! It's nearly that time of the year again - Christmas is less than a month away. And the worst part is having to find that special present for your loved ones. Educational software might be just the thing - a gift of timeless value (for a few hours at least)! To help you spend those hard earned dollars, I have compiled some pointers to make sure that you buy that perfect gift.

What is a good program?

The three most important attributes of educational software are: fun, fun, fun (to paraphrase exponents of the real estate trade). Why is this so? Because, if the software is not fun to use, then no matter how valuable the lesson it teaches, the program will simply not be used and the educational value will therefore be lost.

Note that this statement applies more so to younger children than older ones. The older child will see the software as a valuable resource to help

with the important goal of passing exams.

A good program will not only motivate the child to learn but will also foster an understanding of concepts. Motivation comes from the program's ability:

- to capture attention through colourful graphics and intriguing animations.
- to offer play opportunities through interesting puzzles, game sequences, etc with positive reinforcement and reward.
- to be interactive and respond (preferably in different ways) to a child's actions, provide feedback on performance and assistance with problem solving, at a level of difficulty that is right for the age group.

The four Rs

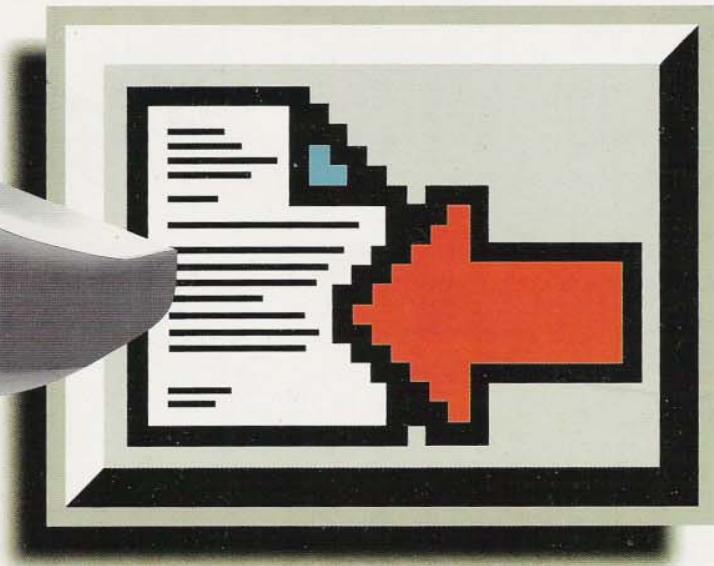
Early learning is often divided into four basic categories: reading, writing, arithmetic and reasoning. These four categories may be further subdivided into stages, corresponding with a child's level of maturity.

I think that the informed parent will find these four categories self explanatory and there should not be any need to go into detail in this brief article. A careful perusal of the cover of any software package will quickly reveal the intended age level and the types of activities that the package offers. I find it helpful to check out the user's manual to get a better understanding of what the software is capable of, although actual trial is better still.

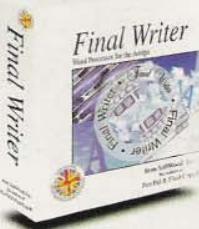
You will probably find that most packages have activities that cover more than one of the four Rs and will cater for quite a wide range of age groups. This is useful, as it means that there will be a number of activities to maintain interest and the same package can be used by more than one child in the family. In addition, the package will grow as the child develops.

My own experience has shown that not all activities will be of interest or the right level of difficulty at any particular point in time. However, as the child's interests develop, different activities of the one software package

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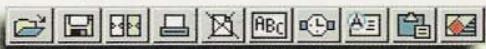
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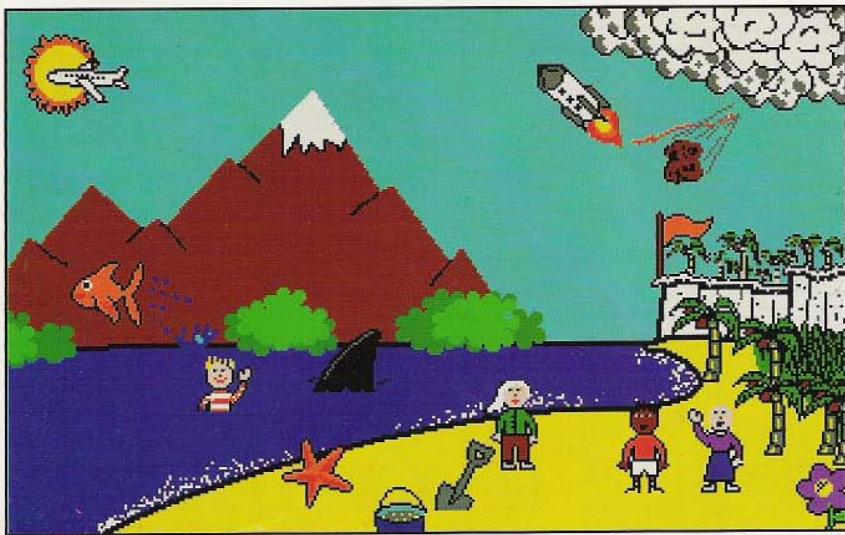
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EDUCATION



Hoopy Paint

will be used at various times. In addition, I have found our son comes back to some old favourites on occasion. The lesson here is that if a child loses interest in a particular package, sim-

ply put it away on the shelf and bring it out another day.

In fact, to keep the child's interest active in the computer, it is worthwhile having two or three packages of

the appropriate difficulty level and covering each area of learning. The variety will help maintain the child's enthusiasm.

Don't limit yourself to the strict definition of the four Rs. Games are just as important as narrowly focused educational activities. Also look at other software that teaches computer technique or some specific area of application. Touch typing programs, wordprocessors and desktop publishers, database and spreadsheet applications, graphics and paint programs, and music programs are all important as part of a well rounded education curriculum.

This weekend our son rediscovered the joys of *Audio Engineer*, an Australian designed audio sampling programme. I plugged in an audio digitiser, connected a microphone and fired up *Audio Engineer*, and in no time at all, Chris was using the equipment to project his voice, record his

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voice and hold interviews with his teddy bear. If this activity isn't educational, I don't know what is!

Evaluating software

The next question is how do you know whether the package you are contemplating buying is the right one? The first step is to carry out an information search. Have a look at software reviews in computer magazines and books, advertisements, distributors' catalogues, visit computer shows and exhibitions, talk to other parents and teachers at school, and browse through the shelves at specialist computer retailers.

By now you should have a fair idea of what your son or daughter likes in terms of computer games - this should allow you to narrow the choice to a relatively small range of possibilities. The next step ideally is to try the software. Some retailers will allow you to do this before buying, but if you have no luck, you may be able to test the software at school or a friend's place (please do not engage in piracy).

"Don't limit yourself to the strict definition of the four Rs. Games are just as important as narrowly focused educational activities"

If none of these schemes work, you will simply have to let the moths out of the wallet and buy the program. You will not always be lucky, but based on your information search and, eventually, experience with the quality of product produced by the various software houses, you will end up with a good collection of educational software.

Note that even if a particular purchase is not a hit straight away, don't throw it away. My experience has been that children will return to a particular program on other occasions.

Where to buy it

I admit that the number of Amiga educational software packages has shrunk on the shelves of software retailers. However, this does not mean that the Amiga is no longer a viable platform for educational purposes. Since the introduction of the Amiga computer, many educational titles have been produced, some of a very high standard.

More importantly, the Amiga is supported by the continual introduction of new titles, some designed in Australia. Don't forget, if you cannot buy a product off the shelf from a retailer, you can ask for it to be ordered in or alternatively contact the distributor, who will suggest a store that carries the product or deal with you direct. Check out the advertisements in ACAR and local newspapers. Below, I have listed some of the places where you

can

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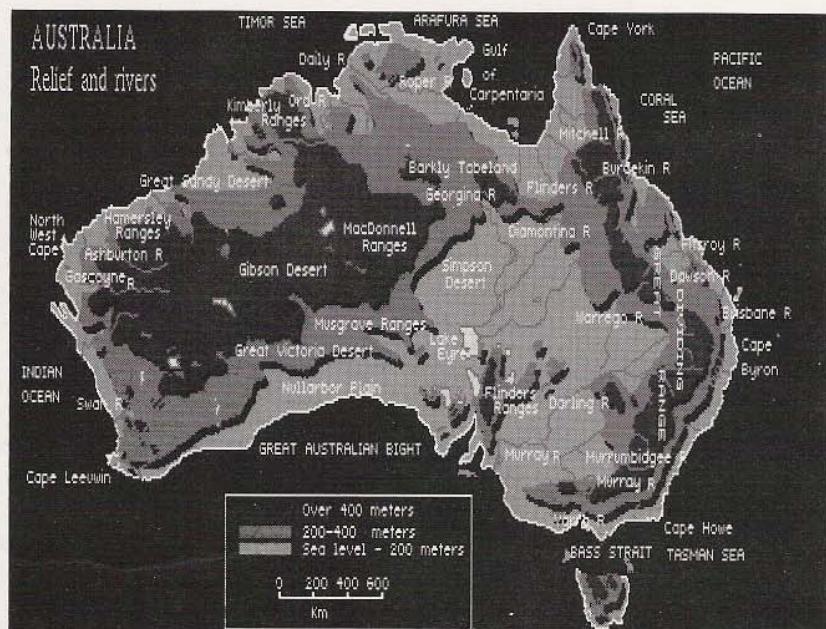
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Australian Graphics Atlas

may find suitable software:

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The major companies that distribute or publish software include: Pactronics (02) 417 7255, Dataflow (02) 310 2020, Allen Computer Supplies (03) 725 3379, Don Quixote Software (076) 33 1561, Rush Software (042) 617 442, Computa Magic (03) 326 0133, HC Software (08) 344 6897.

Check out the advertiser's index at the back of ACAR, look up the company listings in the *Amiga Annual* or simply consult your telephone book for telephone numbers of these companies.

My favourites

In the last few years I have come across quite a few education packages, many of which have been reviewed in these pages. The following is a short list of some of the better ones:

- *The Puzzle Storybook*, for 3 to 8 year olds, covering reasoning and writing skills. This is a particularly user friendly package that appeals to little

guys, particularly the drawing and puzzle section.

- *My Paint*, a beginners paint program that includes a limited palette of colours and range of tools and comes with a set of templates for the kids to colour in. This program is user friendly and very easy to use.

- *Deluxe Paint*, probably the best program for the Amiga. Somewhat difficult to use because of its complexity, but even suitable for very young

children with a little help, and probably as good a paint program as will be found on any platform.

- *Australian Graphics Atlas*, a great resource for geography and political and history studies. Comes with lots of diagrams, maps and charts which can be incorporated into school assignments and multimedia presentations.

- *Hoopy Paint*, a very easy to use Paint program, with 80 ready to paint scenes and a library of people, stars, trees, clouds, etc.

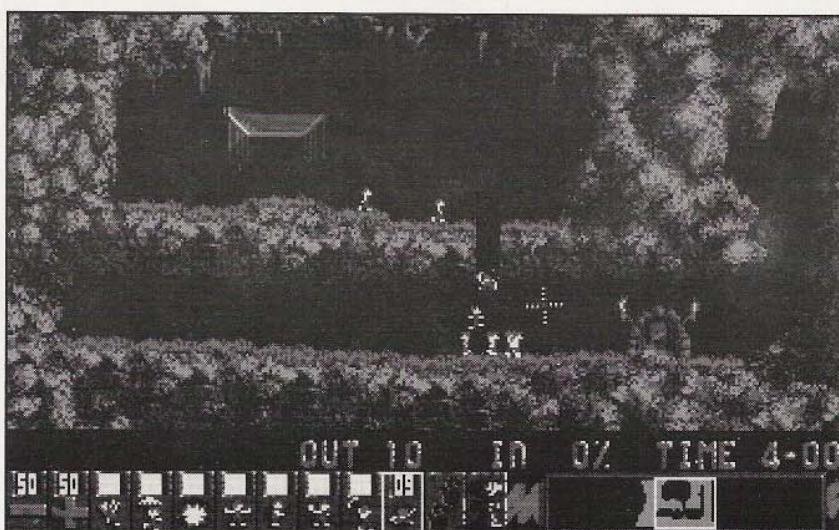
- *Lemmings*, because they are great fun and the music is addictive. Besides, our five year old loves them!

This is certainly not a comprehensive list by any stretch of the imagination and represents a range of software that I have found popular at home. Have a look at the magazine advertisements, past software reviews in ACAR and browse through the products displayed at your department store or specialist computer retailer. I am sure you will find a package that will amuse and educate a loved one.

Correspondence

As usual, please write in with your comments, questions, etc to me care of ACAR or directly to PO Box 136, Forest Hill, Vic 3131. Have a safe and restful break over the holiday period.

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HOT PD

by Daniel Rutter

There's no mistaking it. The Amiga freely distributable software scene isn't what it was. When I took this column over eighteen months ago, I was inundated with software, and had to be very selective in what I mentioned and even more so in what I put on the companion disks.

Recently, though, there's not nearly as much new stuff coming out. Old programs keep getting updated and there's enough new stuff that I don't have to scrape the barrel to get something to put on the companion disks (no heckling, please), but the whole PD and shareware industry seems to be stuck in neutral between the old ECS machines and the new AGA ones.

Don't take this as doomsaying. The Amiga isn't going to shrivel up and blow away overnight, and it's quite probable that this is just a dip, and AGA will get as popular as ECS as prices drop and people get to know about the new machines.

Software's always a problem with any new architecture, since it's something of a vicious circle; unless you're a registered developer you don't get the new toys to play with before they're released, and if you're only writing PD

stuff you're not very likely to be registered.

So there's a lag between the new machines coming out and people writing lots of software for them. Programs don't get written overnight - well, good ones don't - so I'll give it until well into 1994 before I start getting worried. It's not all depressing. One thing I've noticed over the last year or so is that the Amiga virus scene is, at least by IBM standards, dead.

Amiga viruses?

I run *VirusChecker* (see below) in the background all the time as a matter of course but I scarcely need to any more - a pleasant change from the IBM world, where new and more irritating viruses, as well as variations on old themes, come out daily. There are two basic reasons for Amiga virus writers

throwing in the towel and exercising their limited intellects in other ways.

One, most Amiga users are floppy based and so can't be hit by anything but a simple bootblock virus, really new versions of which stopped coming out years ago, and two, many Amiga users have enough savvy to keep their machines virus free.

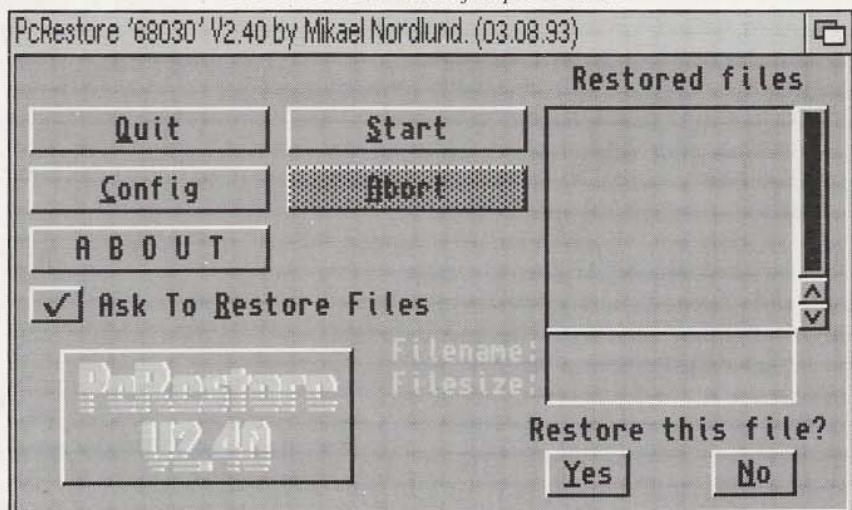
The virus world behaves like a nuclear reactor, with virus-aware users like control rods. No rods, and your reactor turns into a smoking hole in the ground. Not many rods, and the reactor runs hot - like the IBM world, where instructions to check for viruses have been known to result in people wiping their disks with tissues.

If there are lots of people who know how to stop them, viruses never really get going. Every now and then one of the old faithuls like the *Lamer Exterminator* or *ByteBandit* pops its crusty head up again, but I can't recall the last time anyone I know got zonked by an electronic microorganism.

Amiga Connection

Four months ago I mentioned that Amiga Connection, one of my favourite bulletin boards (02) 970 6444, was hooked up to TapeLink, an excellent low cost international file distribution system. TapeLink's going well, and files on all sorts of Amiga, IBM and miscellaneous topics are coming in in multi-megabyte spurts every few weeks.

PCRestore 2.4 - lots of improvements



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- +++ Picard could run it, after a nice cup of Earl Grey.
- ++++ Wesley only.

I'm now told by the sysop, Mario Nicotra (who also, by the way, is the proprietor of the new Computer Affair store in Sydney), that AC will be switching to *DLG Professional* for its BBS software soon. It's using *StarNet* as a write, which, in a word, stinks. It's going to be great to see AC with an interface that matches its content!

+++ PCRestore

I last mentioned this program six months ago. It lets you take backup disks made with the MS-DOS BackUp utility from v3.3 to v5.x, and extract the files onto the Amiga. You need an IBM file system floppy - *CrossDOS*, which comes with AmigaDOS from v2.1 up, is perfect - and then you can transfer files of any size easily between platforms.

The old version was 2.23, and it's since gone up to 2.40. Improvements include a complete new interface, 020 and 030 optimised versions, full keyboard control and lots and lots of mi-

nor bugfixes and improvements. *PCRestore* is much simpler than clowning around with serial links or trying to get removable hard drives to mount on both machines.

+ Artillerus 2

I warned you last month. *Artillerus*, the halfway decent *Scorched Earth Artillery* game variant, has been improved enough that I and several friends have been playing it to death the last few weeks. In case you occasionally go out in the sun and don't know every detail of computer gaming history, *Artillery* was the original two-tanks-blasting trajectory obliteration game, and *Artillerus* has lots of knobs on, interesting weapons and shields and decent computer opponents.

Version 2 is much more stable than earlier efforts, adds lots of new stuff and basically turns the game into something worth registering - the freely distributable version only plays three rounds. Registration's only \$US10.

+++ BindSystem

I've got (counts) 53 assigns on my system. If I had to do every one of those with the Commodore Assign program, I'd have that many extra lines in my startup-sequence. I use the MultiAssign program I mentioned a year ago this month to marshal all these assigns into one line and a data file, but *BindSystem* goes one further.

BindSystem's a portmanteau utility that does assigns, paths, aliases, local and environmental variable and resident programs, with separate data files for every one. This is much tidier than having everything smeared all over your startup-sequence or user-startup, and all you need to run it is DOS 2.

+++ APrf

Text formatting is one of those ancient things that gave birth to all sorts of word processing and desktop publishing stuff, but the dinosaur text formatters continue on and *APrf*'s one of them.

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If you need to take an unsuspecting ASCII text file and change its line length, alter the margins, add line numbering, put it in columns, change the tabulation, put in headers and footers and generally muck it about, this is the program to use. What makes it stand out - a bit - from various UNIX-ported monster formatters is that it's got a graphical interface, so you don't have to enter Command Lines From Hell.

If you ARE a power user, *APrfs* got limited *ARexx* support and will run happily from the command line - with, count 'em, 22 commands, most with many options. Pretty it ain't, but it does the job.

++ FlushLib

Not very useful, but not very big. This program's sole purpose is to kick a resident library out of RAM, so you don't need to reboot or do dumb things like "Stack 1000000" to update it. Fairly useful for programmers, not very for others, but heck, it's only three kilo-

bytes with its manual.

+++ Stat-RAM

Recoverable RAM disks are useful things. They're much faster than floppies and a bit better than hard disk, and you can use them for all sorts of things. AmigaDOS comes with one, RAD. Stat-RAM does the same thing, only it goes like a budgie with a burning bottom because it uses WB2's FastFileSystem, with the International option under 2.1 or higher.

Stat-RAM's based on ASDG's VD0, which has been around for donkey's years, but it's about five times faster. If you're running a DOS 2 or higher machine, this is the recoverable RAM disk to use.

+++ SCSI-Tester

At the ACAR editorial office, our old Syquest 44Mb removable hard drives have been giving us gyp. Intermittent data loss; put a file on a disk on one machine, move it to another and

the file's corrupt. If you've had a similar experience, and want to be sure that it's your SCSI drive and not a dodgy cable, an overstretched power supply, cosmic rays or little green guys inside the computer, then *SCSI-Tester* fits the bill.

It reads every sector on the drive, moves the heads a variable number of times and then reads again, to see if your drive's got any dodgy sectors or isn't finding them properly. There's no way it'll make your drive any worse than it is already, since it only reads and never writes. It multitasks perfectly - it's running in the background as I type this. *SCSI-Tester* is shareware, and costs \$US15 to register.

++++ Xoper

Xoper's not a new program - the last official update was in 1991 - but I haven't mentioned it in Hot PD before. Its basic purpose is to display and control system activity; you can see ports, tasks, screens, memory, resources, de-



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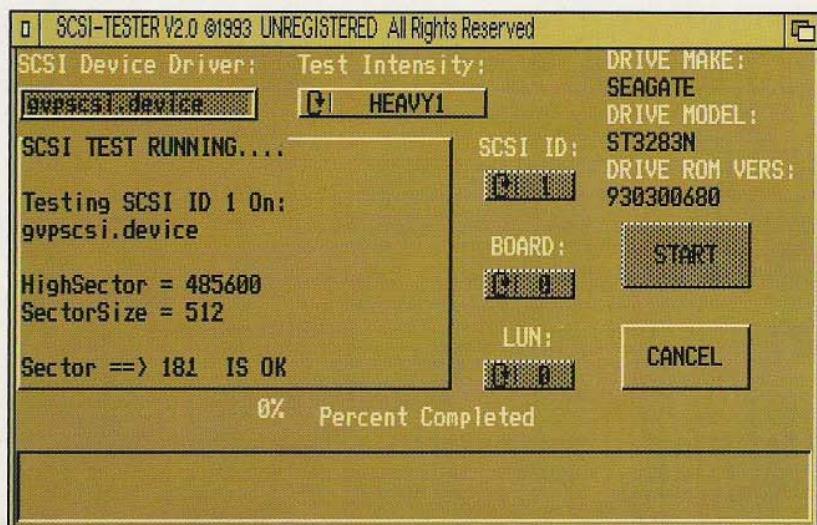
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PUBLIC DOMAIN and SHAREWARE



SCSI-Tester

vices and lots of other stuff, and play about with them in various ways which can, if used correctly, crash your system but good.

This version's an unofficial tweak, but since the real author hasn't touched the program for ages I doubt anyone's going to complain. There's certainly nothing wrong with it, and for quick and dirty system manipulation it's rather useful.

+ Atoms

Atoms is a rather cool little strategy

game. Up to four players take turns to put different coloured atoms on a grid; when a square holds too many atoms it goes critical and redistributes them around itself, turning everything around it to its colour and maybe setting off more squares. Fill the board with your colour and you've won.

The concept is simple, but it can become phenomenally complex. Brilliant fun, but unfortunately there's no computer opponent so you'll need a friend. And if you're running a fast CPU, turn off all caches and burst

modes, because the coder didn't make provision for them. Worth it anyway.

+ Insectoids 2

Blitz Basic's a language pretty much dedicated to producing games, though the most recent version can write serious stuff too. This is not evident in this second version of the Blitz demo game, a great *Galaga* variant with the usual extra weapons, challenge waves and teeth-clenching higher levels. This game comes highly recommended by Andrew Farrell, who has wasted considerable time on it. If you've got an AGA machine you'll need to use the boot menu to drop back to ECS mode.

++ IntuiTracker

IntuiTracker is a simple little program for playing *SoundTracker* modules in the background on your Workbench, so you can listen to some of the very impressive tunes that have come out lately while going about your business. I've been using this version - 1.50 - for a while, and it fixes just about all of the problems with older incarnations.

The downside? It doesn't work on WB1.x. It looks a bit cheesy on a non-interlaced screen, too, but them's the breaks. It multitasks perfectly with very little processor use, plays *SoundTracker*, *NoiseTracker* and



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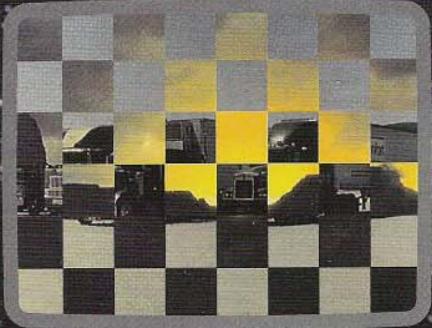
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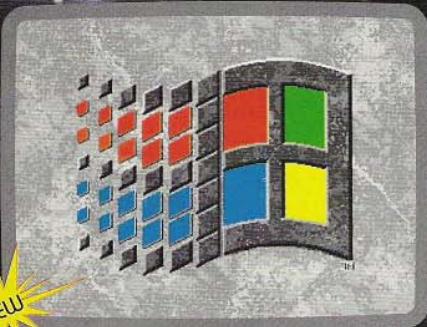
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003c2d48	rexz_ced	Signal	28	0	DormantCygnusEd ver. 3.
003c2d70	ced_port	Signal	27	0	DormantCygnusEd ver. 3.
0045a3c0	ToolTsDaemon_2_0b	Signal	30	0	[ToolTsDaemon]
00257f58	gvpscsi_unit_6_p	Signal	31	0	HyperCache Pro
00257f80	gvpscsi_unit_6_i	Signal	30	0	HyperCache Pro
002590e0	gvpscsi_unit_1_p	Signal	31	0	HyperCache Pro
00259100	gvpscsi_unit_1_i	Signal	30	0	HyperCache Pro
00381dc4	REXX	Signal	31	0	RexxMaster
0038d8d0	AREXX	Signal	30	0	RexxMaster
003c2078	PWkeys V2.0 Port	Ignore	0	0	-----
003b6ef0	PLAY	Signal	31	0	[upd]
003b79d0	DirWork Stuff	Signal	29	0	DW Process
00433d32	Virus_Checker	Signal	30	0	Virus_Checker(C)
00433d30	Virus_Checker CX	Signal	28	0	Virus_Checker(C)
002023b8	KAN_port	Signal	31	0	[PINSTALL]
004c7f70	PictSaver V2.4	Ignore	0	0	PictSaver
00057b54	-----	Ignore	0	0	-----
004676d0	Transcript_MT	Signal	31	0	TS_proc0
004891d0	XopPackets	Signal	31	0	Xoper

Xoper

ProTracker modules, even if they're PowerPacked or compressed with the XPK system and doesn't crash if you're running a fast processor. It can list quite a lot of modules for selection from a menu, or you can use a standard file requester. Simple, bulletproof, great for showing off.

+++ OptiMod

On the subject of *SoundTracker* modules, *OptiMod*'s a program that trims the fat off them. Many modules are put together untidily - the composer made some sequences or included some instruments that he thought better of and took out of the tune, but left in the module just in case he changed his mind. These extra bits never get played, but take up space all the same and bulk out your modules. *OptiMod* scans through modules, finds any unnecessary bits and snips them, without changing the way the module sounds at all. I've used it on a few and it worked perfectly - and it's astonishing how many modules can stand some shortening. If you're short on disk space, it could be very handy.

+++ IconTrace

IconTrace is a program that allows you to monitor what the icon library is doing when you start a program using Workbench. This lets you see if a program you're running is looking for

some oddball ToolType you've forgotten to set or is failing to recognise a setting you thought you got right. It'll also report if programs look for icons. You need Workbench 2 to run it, and it can be a great help if some awkward program's manual doesn't quite tell you what the programmer thought it did.

++ JPEG Datatype

Users of Workbench 3 can use Datatypes to load different image formats as if they were IFF. Here's a JPEG one; it's not very fast, but then nothing JPEG ever is. It's rather nice being able to load any file format without bothering to set a tag; another one to impress

IBM owners (have you ever USED a Windows picture requester? Yeech!).

++ Mouse Odometer

Stupid, stupid, stupid. But oddly mesmerising. This utterly moronic little utility keeps track of how fast you're moving the mouse, how many times you've pressed the left and right buttons and how far in total the mouse has been moved. It stores these meaningless statistics in Envvarc: so it keeps track every time you run it. Owners of earlier versions of DOS will be shattered to know that it requires Workbench 2.

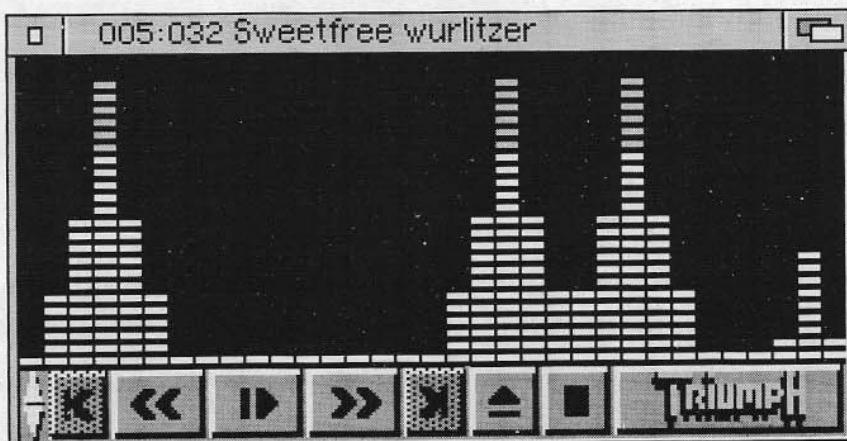
++ Virus Checker 6.32

BootX is still in limbo waiting for Safe Hex International to get a new version out, so my favourite virus checker at the moment is John Veldthuis' *Virus Checker*, which has now hit v6.32. Since 6.29, reviewed two months ago, John's fixed the usual smattering of problems, and added recognition of the f**k virus and several other new strains, as well as removing the slightly embarrassing bug that made *Virus Checker* spot some PowerPacked files as being viruses.

The companion disks for this column are available from Prime Artifax PD. They're called HotPD 12 a and b, and contain every program mentioned in the column. That's right - for once there aren't any annoying extras.

See you all next month!

IntuiTracker



BLITZ 'EM

**Blitz offers low-level power
in a soft landing
programming environment.
Roy Hurley explains how to
expand the power of Blitz
every month in this column.**



Hello again to all Blitz2 users out there! I hope you're all ready to get those little grey cells out in the exercise yard once more, because this month we'll be adding more clever functions to build up our "includes" directory. We'll also be adding speed, power and flexibility to compliment the standard Blitz2 command set.

To begin with, we have BSAVE, a function which complements the BLOAD function from our first tutorial. We can now read and write direct from memory, using the system's DOS Library commands.

This method is extremely quick, and system friendly.

Here is the function's source code:

```
Function BSAVE {filename$,address,length}
; Writes [length] bytes to the file [filename$] from [address]
; returns true if OK, else false if there was an error.
  hand=Open_(filename$,1006)
  If hand>0
    bytes=Write_(hand,address,length)
    Close_hand
    If bytes>0
      Function Return True
    End If
  End If
  Function Return false
End Function
```

BSAVE calls the DOS system function Open(filename,mode). We pass it a pointer to our filename, and a mode number of 1006, which is the NEWFILE mode. This either creates a new file, or writes over an existing one.

If successful, Open returns a valid Dos handle, otherwise it returns a zero. After checking for success, we call Write_(handle,buffer,length) which will move the contents of our memory block located at the passed address, and save it directly to the file.

Memory Search

Our second function is a raw memory search. It scans through a specified block of memory, looking for a given match string. It may lack the bells and whistles of a more comprehensive search routine, which would have wildcards

and case sensitivity options, but it is optimised for speed, and presents a good starting point for you to expand upon.

We pass it a pointer to a match string, for example &Match\$, the address to start searching from, which may be the location of a previously BLOADED file, and the number of bytes in the memory block to scan through.

Our function returns the address of the first occurrence of the match string, or zero if no match could be found.

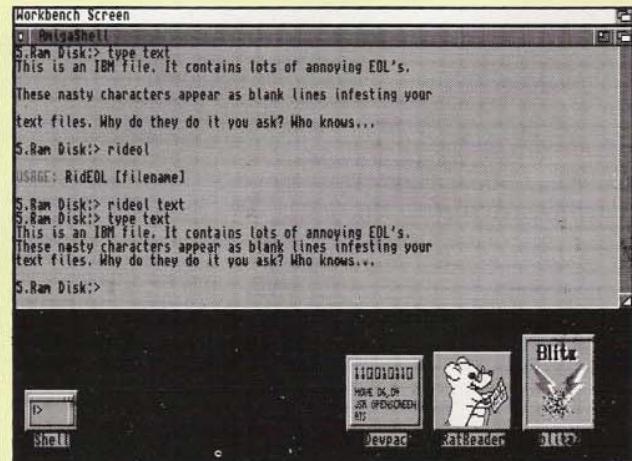
```
Function.I SEARCH {MatchStringPointer,Start,Length}
  UNLK   a4      ; Unlink variable data pointer
  MOVE.I d1,a0    ; Start address of data block to search
  MOVE.I d0,a1    ; Pointer to first char of match string
  MOVE.I d2,d5    ; Number of bytes to search
  SUB.I  a3,a3    ; Clear A3 so function returns zero for no match
  MOVE.I a1,d4    ; Copy a1 to d4 for permanent storage
  CLR.I  d0
  MOVE.b (a1),d0  ; Load first match char into d0
  BEQ   SEARCH_FINN

SEARCH_START:
  CMP.b (a0)+,d0
  BEQ   SEARCH_MATCH    ; Look for a match on the first character
  SUBQ.I #1,d5
  BNE   SEARCH_START    ; Check if all the range has been scanned

SEARCH_FINN:
  MOVE.I a3,d0          ; Return address of match stored in a3
  RTS

SEARCH_MATCH:
  SUBQ.I #1,a0
  MOVE.I a0,a3

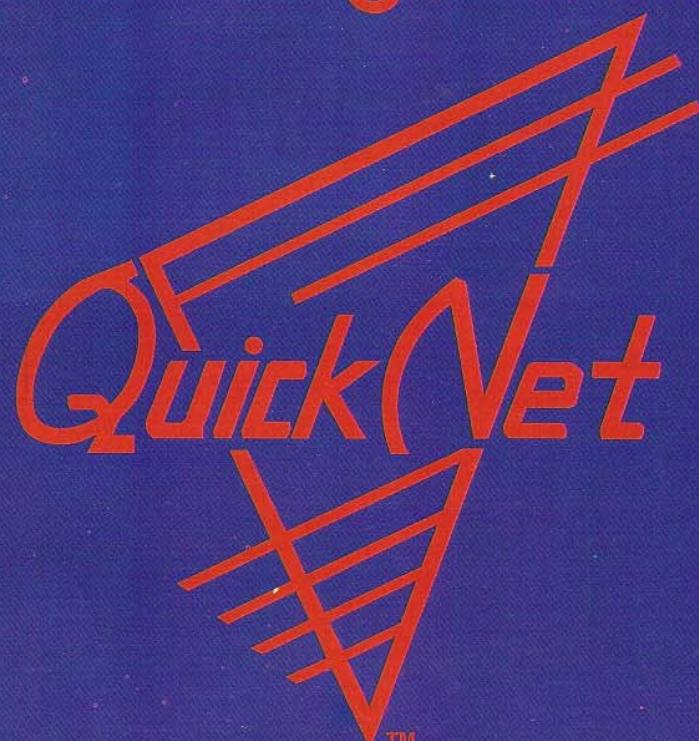
SEARCH_LOOP:
  MOVE.b (a1)+,d0        ; First Character matched, check the rest!
  BEQ   SEARCH_FINN    ; Check for end of string
  CMP.b (a0)+,d0
  BEQ   SEARCH_LOOP    ; Check char is the same
  SUB.I  a3,a3          ; otherwise clear a3, it was a false alarm
  MOVE.I d4,a1
  CLR.I  d0
  MOVE.b (a1),d0
  BRA   SEARCH_START    ; Back to looking for first character match
End Function
```



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As you can see, this function is 100% assembler code. The beauty of Blitz2 is that you can just type machine language instructions directly into your code, and they are added at compile time to your executable. This enables you to add speed and power where you need it most, and still stay in the friendly and safe front end of a high level language. The Blitz2 run-time debugger will even try to find your assembler run-time errors, to save you from the Guru! This is a great way to slowly ease your way into assembler programming!

The method used in the SEARCH function is to scan each byte in the specified memory block until it finds a byte which matches the first byte of the match string. If it finds this, it then checks that each proceeding byte is the same as the next byte of the match string, until it comes to the null character which Blitz2 has at the end of each string.

Don't forget to pass it a pointer to the match string, by using the variable address command "&" preceding the match string, for example: location = SEARCH {&match\$,Start,Length}. Also remember that our function is case sensitive, so if you look for the string "rat", it won't find "RAT". Perhaps you could add the ability to match upper and lower case words as homework for next month?

Stripping bytes

Our last function for this month is a useful function for removing unwanted bytes in a memory block. I had the need recently to do this because of the extra "end of line" characters that IBM text often has embedded in it.

Simply pass our function the address of the memory block, the length of block, and the byte you want to have removed. REMOVE will chop out all of the unwanted bytes, and copy the new data over the old block, returning the length of the new cleaned up memory block.

```
Function.I REMOVE {Start,length,unwantedbyte}
UNLK    a4
MOVE.I d0,a0      ; Start address of data block to clean
MOVE.I d0,a1      ; Start address to write new data block
MOVE.I d1,d3      ; Bytes to scan through

loop
  CMP.b  (a0),d2  ; Check for the unwanted byte
```

```
BNE    loop1
ADDQ   #1,a0      ; Skip over it
SUB.I  #1,d3      ; Decrease length of range
BRA    loop2

loop1
  MOVE.b (a0)+,(a1)+ ; Increment both pointers

loop2
  SUB.I  #1,d1
  BNE    loop        ; Check for the end
  MOVE.I d3,d0      ; Return new length of the cleaned range
RTS
```

End Function

Once again our function is 100% assembly code, for speed. The memory block is simply copied over itself, with all the unwanted bytes skipped over.

A simple CLI program

Now onto our first CLI utility in Blitz2. We will be using our new functions like building blocks to produce a useful CLI program.

The purpose of this program is to accept a file containing those pesky little EOLs that infest IBM text files, and heartlessly chop them all out, copying over the original file with our new Amigafied version.

Usage will be by means of the CLI, and the only parameter our program will accept will be the filename to work on. RidEOL will then load the file, sort through the data block and save it out again minus all the ASCII 13's.

Example usage: RidEOL Ram:IBMttext

Here is the source code:

```
DEFTYPE.I
  INCDIR "dh0:Blitz/includes/"
  INCLUDE EXISTS.Fun
  INCLUDE BLOAD.Fun
  INCLUDE BSAVE.Fun
  INCLUDE REMOVE.Fun

  p.b=NumPars

  If p<>1 OR (p=1 AND Par$(1)="?")
    a$=Chr$(27)+"33m"
    ; Check Parameters
    ; Change colour of the text
```

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```

b$=Chr$(27)+">0m"+Chr$(27)+"[31;40m"
NPrint "" : Print a$, "USAGE: ", b$ ; Print usage info
NPrint "RidEOL [filename]": NPrint ""

else
  f$=Par$(1)
  If EXISTS {f$} ; Check that the file exists
    result=BLOAD {f$} ; Load the file into memory
    If result
      nlength=REMOVE {FADDRESS,FLENGTH,13} ; Remove all the EOL's
      r=BSAVE {f$,FADDRESS,nlength} ; Save the file again
      FreeMem_ FADDRESS,FLENGTH ; Free the system memory
    Else
      NPrint "Can't Load ",f$ ; Can't load the file?
    End If
    Else
      NPrint "Can't Open ",f$ ; Can't Lock onto the file?
    End If
  end if
End

```

Compile the program into an executable, with error checking turned off. It should compile to around nine kilobytes. Notice how our prewritten functions are included at the start of the program. These functions we have created should be kept in a directory called "includes/". We tell Blitz2 about this directory with the line INCDIR "dh0:Blitz/includes/". This helps the compiler to find them all, and makes our program's directory less cluttered.

There are advantages to keeping your modules separate

like this. Firstly, your source code is kept small, manageable, and is easy to scroll through. Secondly, it encourages modular programming techniques, reducing errors because each of our prewritten functions are extensively bug tested. Thirdly, the variables used within these functions are isolated, so they won't clash with your global variables.

The main code in RidEOL checks the CLI parameters that were passed to it. By using the Par and Par\$() commands, we have complete access to what our user was trying to tell us. Here, we check that only one parameter was passed, showing the user the correct syntax if they entered a question mark, or more or less than one parameter.

From there we call EXISTS to verify the file is available to our program, and then BLOAD it into memory. We then call REMOVE to do the dirty work and rid the file of those end of line characters. Finally our file is saved over the input file, using BSAVE, and the memory we used is returned to the system by FreeMem.

Note the way the source code is indented. It's easy to see our conditional blocks, program flow, and error checking. Messages generated at appropriate places, should the worst come to happen.

That's all for now, until next month, happy programming! If you have any questions, problems or suggestions, please write to me. I can also be contacted via Powerhouse BBS (042) 616380 GT Net 302/017. □

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The C64 Column

by Owen James

Modeming with your C64

Some sad news this month. GEOS, for long the most popular piece of productivity software available for the C64, will no longer be produced. Sales of GEOS have fallen significantly this year, largely the result of fewer sales of new Commodore 64s.

There's no question that GEOS's very existence helped to keep the C64 alive, especially over recent years when new software releases were becoming more scarce.

Comms on your 64

One of the biggest questions I get asked from Commodore 64 users concerns the use of Modems with their machine. "What are they?", "What can I do with them?", and "How will I hide the next phone bill from my wife?". This issue we take a look at Modeming with your C64.

To get started in computer communications you will obviously require a modem. These magical little boxes connect between your computer and telephone line, converting computer signals into tones and vice versa. 'Modem' is actually a contraction of the words Modulation and Demodulation, which describes this process.

There was a time when modems designed specifically for the C64 were in abundance, but these days you'd probably only find them second-hand. A more practical alternative would be to use a standard modem, as used with an IBM or Amiga, and an interface unit.

CMD produces a suitable interface, called the Swiftlink, which connects to your C64's cartridge port. The advantage of Swiftlink is that you can use modems that run at speeds of up to a respectable 9600 baud, thus reducing both online time and your phone bill.

The second requirement is some form of communications software. For the C64, there's quite a range to select from. The most popular amongst communications fanatics is NovaTerm, which is an easy to use, yet powerful, shareware offering. (Details on where to obtain the necessary software and hardware appear at the end). With the addition of a telephone socket, you should have everything you need to communicate with the outside world.

Your first call with a modem will most likely be to a Bulletin Board System, or BBS. It is from these that you may 'download' public domain and shareware software to your own system, or chat with other users from around the world.

If it's your first time logging onto a BBS, you will be asked some standard questions by the remote system. It will want to know details such as your address, age and computer type. You are advised to answer these questions honestly, and the information is usually kept confidential. Some BBSs you might like to try calling:

Way Out West. This BBS caters extensively for Commodore 64 and 128 users with a large selection of files and messaging areas. If you're in Sydney's

West, or don't mind long distance calls, Way Out West is well worth a look. Also caters for Adult users as part of the AdultLink message network. Call (02) 628 8888.

Space Station. Situated around the Blue Mountains area, west of Sydney, Space Station provides an excellent selection of public domain files and utilities for the C64/128 user. Call (047) 742 252.

Talisman. For Victorian users, Talisman BBS provides files and messaging areas for the C64. Call on (059) 444 061.

Pilbara BBS. Offers support mainly for Amiga users now, but still has a good selection of files and messaging areas for the C64 and 128. Call (09) 419 2717.

If you thought learning computer jargon was akin to learning Latin, just wait until you try Modem-speak. Just as computer technology has created what seems like a whole new language, the birth of computer communications has heralded yet another new list of words, phrases and acronyms. Here's just a few to get you started.

Echoes: Most BBSs carry what are known as 'Echoes'. Echo messages can be thought of as conferences which can span a country or even the world, although they don't operate in real time. They provide the user with a means to contact other like-minded users to discuss ideas, problems, or just to have a chat and meet new people.

In Australia, the 64_Talk echo is an excellent way to get in touch with Australian C64/128 users. On a larger scale the CBM echo goes world-wide, as does the CBM-GEOS echo.

Other Australian and international echoes exist for just about any kind of hobby or special interest group you'd care to name, including religion, desktop publishing, and music.

If you are interested in 'meeting' people in more general terms, the Australia-wide Pen Pal echo provides the perfect opportunity to do so. Many long (and not so long) distance friendships have been forged in Pen Pals, which owes much of its friendly charm to the self-proclaimed "World's Nicest Moderator", Denise Altoff.

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FIDO: One of the more common global networks used for distributing echoes and private Netmail. Can distribute mail as quickly as Australia Post, providing it has a good tail-wind and everyone holds their mouths right. As with all networks, mail gets regularly lost, although there are those that insist it gets eaten by the mysterious, but as yet undiscovered, Message Monster. You decide...

NETMAIL: A reasonably effective method of transferring personal messages that (theoretically) should only be viewed by the eyes of the poster and receiver. However, there's nothing to stop System Operators from every point between the origin and the destination systems reading what you post. Aside from that, errors do happen and you may find that your private message has been publicly broadcasted to systems right around the globe. Consider it a warning.

Moderator: There's a joke going around that for Moderator you should read Dictator and Egotist, and in some cases that's not too far from the truth. A Moderator's job is to keep echoes running smoothly and with some degree of peace and harmony. Many take their job too seriously, and enforce ridiculous rules for users to adhere to. Complain, and they have the power to remove you from an echo. A necessary evil that should be humoured as much as possible.

SYOSP: A contraction of SYStem Operator. One who runs a bulletin board. Also, the one most likely laughing at your online typing abilities.

Upload: The process of transferring files from your computer to a remote system, such as a bulletin board.

Download: Transferring files from a remote system to your computer.

BAUD: Used to describe the speed of a modem. A modem operating at baud rate of 2400 can transmit and receive data at up to 240 characters per second, while a standard 14,400 baud modem can transmit data at up to al-

most 1,500 characters per second. Aside from the fact that a faster modem can transmit and receive data significantly more quickly, they can also save some serious money if you're a regular long-distance caller.

Smilie: 'Smilies' provide a way of adding 'facial expressions' to messages you post. Creating a smiling or bug-eyed face can be achieved using regular keyboard characters, for example :-8) B). If you have trouble seeing faces, try looking at them side on. And yes, it is like trying to make pictures out of clouds.

Product Info

Modems

Modems designed specifically for the C64 are no longer available new, so try your local classifieds. As mentioned above, standard modems will work happily with the C64 providing you're using an interface such as CMD's Swiftlink.

Prices for standard 2400bps modems begin at \$259.00, while the faster and usually more cost effective 9600bps models start at \$499.00. Try your local retailer, or call Code One Computer Services on (047) 57 3982 or post PO Box 192, Katoomba NSW 2780. Code One will supply them with free C64 communications software.

SwiftLink

SwiftLink is the interface required if you wish to use standard modems with the C64. They are manufactured by CMD and may be locally available through Logico. Tel: (02) 519 6719 or Novo: (049) 201 102.

Software

C64 communications software is supplied free with modems purchased through Code One, or may be available from any one of the numerous public domain libraries.

That wraps up our quick tour of C64 modem communications. If you have any questions on this or any other C64 topic, drop me a line: The C64 Column, PO Box 288, Gladesville NSW 2111. Meantime, have a safe and happy Christmas, and I'll see you in the new year. □

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CanDo Column

Designing a foreign language file converter

CanDo allows you to create complete Amiga applications, concentrating first on the interface - designed using simple point and click actions. Greg Abernethy steps through complete CanDo programs every month in this column.

This month we will be designing a foreign language file converter. The program will allow you to load any text file in any language and convert it to any other language by the use of the dictionary database creator. You can create German-English or French-German dictionaries, for instance, and use them to convert your language text files. The program will consist of one card and a SubDeck card.

I would like thank Trevor Parker of Ballina for the idea for this program. Trevor has created an excellent Stock Control Program as Public Domain. If you would like more details contact Trevor at 4 Skinner St, Ballina 2478.

Creating the Language File Converter

The specifications for the window;
 WINDOW NAME "File Translator Utility..."
 WINDOW SPECIFICATIONS
 X POSITION = 0 : Y POSITION = 0
 WIDTH = 640 : HEIGHT = 256
 NUMBER OF COLOURS = 4
 DRAG BAR GADGET : WINDOW BACK/FRONT
 GADGET : WINDOW CLOSE GADGET

WINDOW OPTIONS
 THE WINDOW HAS VISIBLE BORDERS TRY TO
 OPEN WINDOW ON CURRENT SCREEN
 CARD SPECIFICATIONS
 CARD NAME "Convert"
 BEFOREATTACHMENT SCRIPT
 LoadSubDeck

```
TheCurrentDirectory||"ConvertSub"; Load the
SubDeck
```

```
TRANSLATOR DOCUMENT SPECIFICATIONS
OBJECT NAME "TransDoc"
DOCUMENT NAME "Translator"
DOCUMENT TYPE "Memo"
ORIGIN X = 8 : Y = 13
SIZE X = 624 : Y = 200
DOUBLEBEVEL BORDER
No Scripts
```

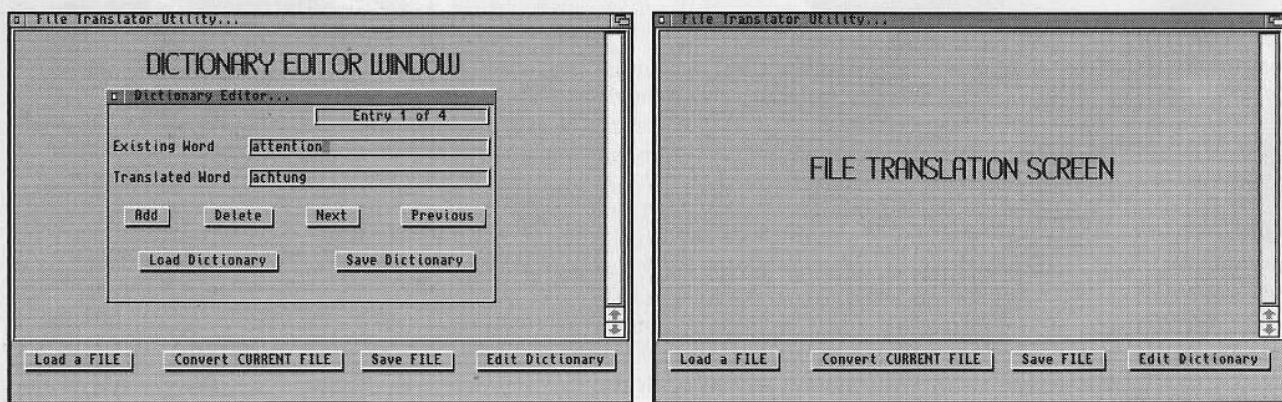
```
LOAD FILE BUTTON
NAME "Load"
Text "Load a FILE"
ORIGIN X = 18 : Y = 222
SHADOW BORDER
```

```
RELEASE SCRIPT
Let File =
AskForFileName(TheCurrentDirectory,"Select FILE
to LOAD...",188,61)
If FileOf(File) <> ""
  WorkWithDocument "Translator"
  Clear DOCUMENT
  LoadDocument File,"Translator"
  MoveCursorTo STARTOF DOCUMENT
EndIf
```

Explanation:

This script asks for a text file to load into the Translator document. This is the file to be converted.

```
CONVERT FILE BUTTON
NAME "Convert"
Text "Convert CURRENT FILE"
ORIGIN X = 161 : Y = 222
SHADOW BORDER
RELEASE SCRIPT
Let File =
AskForFileName(TheCurrentDirectory,"Select
DICTIONARY to
LOAD...",188,61)
If FileOf(File) <> ""
  If FileType(File) = "CDVR"
    Dispose Dict
    Let Dict = LoadVariable(File)
    Do "Convert"
```



```
EndIf
EndIf
```

Explanation:

This script asks for the DICTIONARY to use to convert the CURRENTLY displayed file. The Dictionaries are created using the SubDeck card explained later.

```
SAVE FILE BUTTON
NAME "Save"
Text "Save FILE"
ORIGIN X = 362 : Y = 222
SHADOW BORDER
RELEASE SCRIPT
Let File =
AskForFileName(TheCurrentDirectory,"Enter NAME of FILE to
SAVE...",188,61)
If FileOf(File) <> ""
  WorkWithDocument "Translator"
  SaveDocument "Translator",File
EndIf
```

Explanation:

This script asks for the FileName of the converted FILE and saves the file under that name.

```
EDIT DICTIONARY BUTTON
NAME "Edit"
Text "Edit DICTIONARY"
ORIGIN X = 480 : Y = 222
SHADOW BORDER
RELEASE SCRIPT
```

```
OpenRequester "Sub" ; Open The SubDeck Window
```

```
ROUTINE
"CONVERT" Routine SCRIPT
MakeDocument "New"
WorkWithDocument "Translator"
MoveCursorTo STARTOF DOCUMENT
Let Lines = LinesInDocument
If Lines = 0
  ExitScript
EndIf
Let x = 0
Loop
  WorkWithDocument "Translator"
  Let x = x + 1
  PositionOnLine x
  Let lin = TrimString(TheLine)
  Let words = NumberOfWords(lin)
  Let y = 0
  If words > 0
    Loop
    Let y = y + 1
    Let word = GetWord(lin,y)
```

```
Let s = SearchArray(Dict,word,".Old",1)
WorkWithDocument "New"
If SearchFound
  Type Dict[s].New||"
Else
  Type "*"||word||"
EndIf
Until y = words
Endf
WorkWithDocument "New"
NewLine
Until x = Lines
WorkWithDocument "Translator"
Clear DOCUMENT
InsertDocument "New"
Flush "New"
MoveCursorTo STARTOF DOCUMENT
```

Explanation:

After loading the appropriate dictionary database, this routine is performed to convert the words in the current file. A new document is created to be used for storing the converted text. The loop searches the dictionary for each word in the document and if found types the translated word into the "New" document.

If no match is found, an asterisk is

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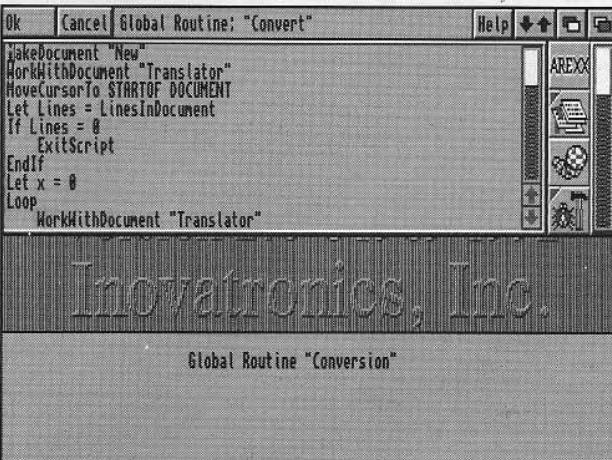
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typed in front of the word to tag it as unconverted. The converted file is then placed into the "Translator" Document. In this way, the user can edit the text file to convert the words manually.

There are two slight problems with this script. There is no provision for checking punctuation marks such as commas and fullstops. An additional routine could be added that checks for punctuation marks in each word, strips them before converting the word and then replaces the punctuation mark afterwards. Also, there is no provision for viewing the old file alongside the new file. This could be remedied by adding a card to the SubDeck to display the old file in a separate window.

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```
WINDOW NAME "Dictionary Editor..."
WINDOW SPECIFICATIONS
X POSITION = 100 : Y POSITION = 50
WIDTH = 400 : HEIGHT = 140
NUMBER OF COLOURS = 4
DRAG BAR GADGET : WINDOW CLOSE GADGET
```

```
WINDOW OPTIONS
THE WINDOW HAS VISIBLE BORDERS TRY TO OPEN WINDOW ON
CURRENT SCREEN
CARD SPECIFICATIONS
CARD NAME "Dictionary"
AFTERATTACHMENT SCRIPT
Dispose Dict
Let Index = 1
Let Dict[Index] = GetDBObjects
```

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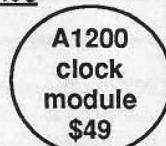
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```
SetText "Entry","Entry"|||Index|||of|||NumberOf
ArrayEntries(Dict)
PrintText "Existing Word",8,34
PrintText "Translated Word",8,54
SetObjectState ".Old",ON
```

Explanation:

When the Window first appears, there is no database loaded, so the Dict variable is cleared. The first entry is set to one (not zero), and the GetDBObjects command is used to fill the first entry. This is used so that the NumberOfArrayEntries(Dict) will always equal one.

FIELD SPECIFICATIONS

```
Field Name "Entry"
ORIGIN X = 217 : Y = 14
WIDTH = 172 :
BORDER = DOUBLEBEVEL :
CENTRE JUSTIFICATION
No Scripts
Field Name ".Old" ; Database field
ORIGIN X = 150 : Y = 34
WIDTH = 240 :
BORDER = DOUBLEBEVEL :
LEFT JUSTIFICATION
RELEASE SCRIPT
SetObjectState ".New",ON
```

```
Field Name ".New" ; Database field
ORIGIN X = 150 : Y = 54
WIDTH = 240 : BORDER = DOUBLEBEVEL : LEFT
JUSTIFICATION
RELEASE SCRIPT
SetObjectState ".Old",ON
```

BUTTON SPECIFICATIONS

```
ADD BUTTON
NAME "Add"
Text " Add "
ORIGIN X = 20 : Y = 78
SHADOW BORDER
Release SCRIPT
Let Dict[Index] = GetDBObjects
Let Index = Index + 1
InsertArrayEntry Dict,Index
Do "ShowIt"
```

Explanation:

This script adds an entry to the current database, and then performs the "ShowIt" routine.

DELETE BUTTON

```
NAME "Delete"
Text " Delete "
ORIGIN X = 102 : Y = 78
SHADOW BORDER
Release SCRIPT
```

```
DeleteArrayEntry Dict,Index
Let Index = Index - 1
If VarType(Dict[Index]) = "Nothing"
    Let Index = 1
Endif
Do "ShowIt"
```

Explanation:

This script deletes an entry from the current database, and then performs the "ShowIt" routine.

NEXT BUTTON

```
NAME "Next"
Text " Next "
ORIGIN X = 206 : Y = 78
SHADOW BORDER
Release SCRIPT
Let Dict[Index] = GetDBObjects
Let Index = NextArrayIndex(Dict,Index)
If Not SearchFound
    Let Index = 1
Endif
Do "ShowIt"
```

Explanation:

This script cycles to the next entry in the current database, and then performs the "ShowIt" routine.

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```

PREVIOUS BUTTON
NAME "Previous"
Text " Previous "
ORIGIN X = 303 : Y = 78
SHADOW BORDER
Release SCRIPT
Let Dict[Index] = GetDBObjects
Let Index = PreviousArrayIndex(Dict,Index)
If Not SearchFound
    Let Index = LastArrayIndex(Dict)
Endif
Do "ShowIt"

```

Explanation:

This script cycles to the previous entry in the current database, and then performs the "ShowIt" routine.

```

LOAD DICTIONARY BUTTON
NAME "Load"
Text " Load Dictionary "
ORIGIN X = 35 : Y = 107
SHADOW BORDER
Release SCRIPT
Let File =
AskForFileName(TheCurrentDirectory,"Select FILE
to LOAD...",150,74)
If FileOf(File) <> ""
    If FileType(File) = "CDVR"
        Dispose Dict

```

```

Let Dict = LoadVariable(File)
Let Index = 1
Do "ShowIt"
Endif
Endif

```

Explanation:

This script asks for a database to load, checks to make sure it is a valid CanDo variable ("CDVR") and then loads and displays the database.

```

SAVE DICTIONARY BUTTON
NAME "Save"
Text " Save Dictionary "
ORIGIN X = 236 : Y = 107
SHADOW BORDER
Release SCRIPT
Let File =
AskForFileName(TheCurrentDirectory,"Enter NAME
of FILE to SAVE...",150,74)
If FileOf(File) <> ""
    Let Dict[Index] = GetDBObjects
    SaveVariable Dict,File
Endif

```

Explanation:

This script asks for the name of the database to save, and then saves the da-

tabase under that name.

```

"ShowIt" ROUTINE
SetDBObjects Dict[Index]
SetText
"Entry","Entry"|||Index|||of|||LastArrayIndex(Dict)
SetObjectState ".Old",ON

```

Explanation:

This routine sets the Database fields to the current entry and sets the ObjectState of the ".Old" field on.

When you have completed the SubDeck, save it in the same directory as the main deck and use the filename "ConvertSub" for the SubDeck.

Final Words

Although this example is very basic, with a bit of work it could develop into an extremely useful language conversion program. I'd be interested to see any finished products.

Also, I'd like to wish all readers of this column a Merry Christmas and Happy New Year. TTFN. □

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SHAREWARE PROGRAMS REQUIRE A SEPARATE PAYMENT TO THE AUTHOR, IF FOUND USEFUL.

Phil Campbell's ACAR Entertainment

From the Entertainment Editor

It's Christmas again - the season of good cheer. So why am I feeling so grumpy? In short, I've got the CD-32 Blues. Not that there's anything wrong with the machine. As far as I know, it's a real winner. Not that I'd know much, of course - after all, I'm only the Entertainment editor of Australia's best read Amiga publication. Why would Commodore think I'd be interested? Obviously, they don't. Apart from one press kit, Commodore's PR gurus have been mysteriously silent on the subject. As for a review machine and software, well, who cares? Certainly not Commodore. I guess they wouldn't mind if the Entertainment Section simply said nothing about the whole subject. No CD-32 reviews. Not even a mention.

Naturally, that's not the approach we're going to take. In fact, in this issue you'll spot our very first CD-32 game reviews - and there'll be more to come. The fact is, Commodore's CD-32 is a great little machine, and we'll support it. But gee, guys, we wouldn't mind a bit of encouragement.

That's enough griping for now - 'cause as usual, we've got heaps of fun stuff at this end of the mag. Check out Daniel Rutter's run-down of two player games. Daniel says it's more fun playing against people than a machine, and he's absolutely right. And guess what? Now you can play games against up to 40 other players with Metro Games On-

line system. Read all about it in my report on the release of *Air Warrior*, their first amazing on-line offering. Simply load the game, dial in to the central computer, and you're in the air, battling other aces from all over Australia.

Keen adventurers will find plenty on offer too - as usual, you'll enjoy Mike Spiteri's Adventurers' Realm. And if you're caught halfway through last month's *KGB* solution, you'll find the second and final instalment from Mark Harris - as usual, though, don't be tempted to read a full solution until you really need it!

Syndicate competition results

October's Electronic Arts *Syndicate* competition was a real winner, with a huge number of entries. Maybe the questions were too easy? Well, maybe not, because the vast majority of entrants couldn't even count the number of times the word "the" appeared in October's *Syndicate* review. Remember, I did say the letters "the" appeared in other words too - like "their" for example. And the answer was ... 47. Only fifty entrants had it right - so it was down to the comparing the quality of answers to question 2; "If you had a persuadertron, who would you use it on?" A number of guys mentioned Elle McPherson; two readers want to get rid of *Paradise Beach* forever - and most, very unimaginatively,

said they'd use it on me to make me give them a prize. Bad luck - it didn't work! So here's a list of the six lucky prizewinners: 1. Colin Drift, North Rocks NSW, 2. Robert Davidson, Werribee Vic, 3. Miriam Cheney, Lockleys SA, 4. Ron Vriens RAAF Edinburgh, 5. T. Wahlen, Warrimoo NSW, 6. R & R Hurley, Gwynneville NSW.

Your prizes are on the way, courtesy of Electronic Arts!

ACAR Disk Collection

Yes folks, we're still flogging off our ACAR Hints Disks 1 and 2, not to mention our PD Games Collection. The Hints disks are both packed with helpful game tips - you'll find every game hint or tip ever published in ACAR, plus a whole lot more as well. And if you're looking for an easy introduction to Public Domain games, our PD Games disk is the answer - we've collected a bunch of games that are genuine fun!

To order, simply send a blank disk, a cheque or postal order for \$5.00, and a stamped, self addressed envelope to Phil Campbell, PO Box 23 Maclean NSW 2463, with a note indicating which disk you're ordering.

ENTERTAINMENT HINTS & TIPS

Send your game hints and tips to Juris Graney, 41 Cameron St Maclean for instant fame and glory. No fortune, sorry - we can't afford it! But the good news is, if you send your hints and tips on disk with a stamped self addressed envelope, we'll send you back a copy of our ACAR Hints Disk 2!

The following little cheats come from Bill Fife of Blacktown.

Tearaway Thomas - This cheat disables the timer. Simply type in 'TIMEFLIESLIKEABANANA' at any point in the game.

Crystal Kingdom Dizzy - Type one of the following codes into the game genie for that level:

Level 2 - G5J73Q8HK
 Level 3 - H7T554Y9L
 Level 4 - 83J5G62KF

The following cheats are from Jesse Aherne of Devonport who used the well-coveted Action Replay Cartridge.

Use the 'M' command for these following values:

APB

32167 - 0 for No Demerits
 3219b - 0 for more time

Dalek Attack

c11cf1 - Lives
 c11cf4 - Bombs
 c11cf5 - Bullets

Deliverance

54d - Lives

Desert Strike

c77045 - Hydras
 c77085 - Hellfires
 c18353 - Fuel
 c1835f - Lives

Kings Bounty

c2a85f - Gold

Wonderboy in Monsterland

a2c0 - Gold
 98ed - Bullets
 98ec - Choice of Weapons
 05-Bombs
 06-Fireballs
 07-Wind
 08-Lightning

The following cheats are all from Jason Strudwick of Junee in NSW. Thanks a whole heap for these cheats Jason. They are of great use. [Ed: These cheats were transcribed from paper. There were 18 pages. Jason, my friend, why didn't you send them on disk!]

Nightbreed

Type RISEN FROM THE DEAD to activate the cheat mode.

Gremlins 2

Type SINATRA on the high score table for infinite lives.

Turrican

Type BLUESMOBIL on the title screen for 99 lives.

Voyager

Type WHEN THE SWEET SHOWERS OF APRIL FALL on the option screen to activate the cheat mode.

Nitro

Enter your name as MAJ for extra help.

Chuck Rock

Type:
 ESTRANO for fly mode
 UNCLE SAMS for infinite lives
 MORTIMER to skip zones (keys 1-4)
 TURN FRAME to skip levels (keys 1-4)

NOTE: Zone/Level skip can't be used together

Titus the Fox

The codes for levels 1-16 are: 2625, 8455, 2974, 4916, 1933, 0738, 2237, 5648, 6390ear giving access to locations and monsters.

Final Fight

Press HELP when it says 'hang on Mike turn up your TV' for infinite lives.

Midnight Resistance

Pause the game and either type IT'S EASY WHEN YOU KNOW HOW or SIAMESE for infinite lives.

Rodland

Press HELP five times while in pause mode for infinite lives and to allow you to use the space bar to skip levels.

Pang

Enter WHAT A NICE CHEAT on the map screen to skip levels.

Humans

The 80 codes are:

DARWIN, ANDIE PANDY, GET A LIFE, CARLOS, HOWIE, MOOBLE, CSL, THE HUMBLE ONE, PIXIE, MILESTONE, WAR WAR WAR, J MCKINNON, UNLUCKY, BLUE MONKEY, RED DWARF, BAD TASTE, THE KITCHEN, CJ, SORT IT OUT, SMART, VILLA3BORO2, EARLY MORNING, BORO4LEEDS1, EASY LIFE, JIMS TIES, PARKVIEW, NICENEASY, GREEN CARD, COOKIE, MALCY MALC, RAVING BURK, YOU GOT IT, SGNIMMEL, MINISTRY, MAD FREDDY, BIZARRE, FREE SCOTLAND, APPLE JUICE, PAYDAY, BANANNA MOON, BONUS, BOUNCING, NO MONEY, A S F, VISION, SISTERS, FAST FASHION, CARGO, RAB C NESBITT, RANGERS, RAINBOW, DOODY, MIGHTY BAZ, TIRED, CONSOLIDATED, STAY HAPPY, AMERICA, ANOTHER DAY, ISOLATION, PROMISED LAND, DAEMONSLATE, BIG RAB, MIAMI VICE, MARAGERT M, A34732473, HELP ME, THE EXILES, EIGHTLANDS, WINE AND DINE, NIN, TECHNOPHOBE, GETTING THERE, TIME IS, RUNNING OUT, LORDS OF CHAOS, NOW ITS DONE, IM OUT OF HERE, HERES TO A BETTER LIFE, BYE BYE BYE.

Entertainment Letters

Send your entertainment letters to Phil Campbell, PO Box 23 Maclean NSW 2463. Feel free to ask for help, offer advice, or simply comment on the Entertainment Scene in general ...

Buy One and Help

Dear Phil, I've compiled many disks for MegaDisc, one of which may be of interest to your readers of the Entertainment Section. MD-Games is a compilation of all the games reviewed from Megadisc 1 to 30, set up in a Hyperbook format for easy browsing. Over 200 commercial and PD games are reviewed. The disk costs \$10 from MegaDisc.

I have also recently compiled six discs for sale as charityware. That is, all proceeds from the sale of these disks go to Technical Aid to Disabled (TAD), a group of volunteers in Canberra who make technical aids to assist disabled people live an easier and more productive life. The group is no big-moneyed charity, and even a small infusion of funds can make quite a difference to them.

The TAD disks which may be of interest to your readers include Home Brewer, Kids Disk and a Jigsaw Disk. (There are also three disks of clip art which is prepared so that it is ready to use in word processors for letters, greeting cards and school projects.)

If people are interested, they should drop me a line.

Leigh Murray
 35 The Ridgeway
 Queanbeyan NSW 2620

Ed: Even if you don't want any of these disks, I reckon you should buy them anyway - Technical Aid to the Disabled is a top charity for computer-heads like us to be supporting. So get in touch with Leigh right now. That's an order!

ENTERTAINMENT

Assembly Help Wanted

Dear Phil, Can you get me in touch with Jim Darcy as I want to find out more about using the ASSEMBLY option in the action replay as I enjoyed his Armour Geddon Hack in ACAR. Any suggestions on how the file is written or could be improved on then please let me know as writing is not my forte.

P.S. Excellent mag, great value for money.

P.P.S. Is there a PD version of CANDO that I can use, as I find ACAR's Tutorials very interesting and would like to give it a go but cannot afford the \$200 for the commercial version.

Ian Eldridge
Wadunga, Vic

Ed: Sorry, Ian, but we've lost Jim's address details. If he's reading this, maybe he'll get in touch. I've got a feeling I saw a cut-down version of CANDO on a cover disk of a UK magazine some time ago, but I'm afraid I can't be much more specific than that.

Hall of Fame

Not much action in the Hall of Fame this month. Please note, Hall entries should be sent to the Hall Keeper at the address below, and not to the Entertainment Editor.

On an upnote though, the entry received from Matthew Vos absolutely slaughtered Timothy Latimer's highscore for *Pinball Dreams*. Don't worry Mr Latimer, see if you can better Matt's mammoth effort.

Well, must be off, but I will leave you with a bit of wholesome philosophy from an unknown prophet - Don't refuse to go on an occasional wild goose chase. That's what wild geese are for! See ya next month Australia.

Send your high scores to: Hall Keeper, Juris Graney, 41 Cameron Street, Maclean, NSW, 2463. Please mark clearly whether your scores are for C64 or Amiga. And remember - NO CHEAT MODES ALLOWED!

AMIGA
ACTION FIGHTER 132,530 R Baker
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AMAZED 130,500 C Turnadge
ANARCHY 646,560 Sid Vicious
AQUATIC GMS 4,170,666 P Carey
AXEL'S MAGIC HAMMER 329,800
Aaron Buscumb
BAAL 134,250 Davo
BARBARIAN 2 100% (C) S Vicious
BATTLE COMMAND 334,200 P Cain
BATTLE SQUADRON 999,999,999

(C) Amos Burbidge
BEYOND ICE PAL. 67,626 (C)
Chris Turnadge
BIO CHLLNG 29,000 A Sanderson
BLOCKOUT 85,281 Stephen Lark
BLUES BROTHERS (C) Loopy
BOMBJACK 468,120 Kathy Butters
BUBBLE + 276,850 (C) C Toyne
BUBBLE B 2,960,980 K Cameron
BUGOKAN 6:08min M Sorenson
BUGGY BOY 113,260 Pwrhse Nick
CAR-VUP 484,122 Happy Hacker
CHASE HQ 7,628,060 Ant D'Nuit

Pen Pals Wanted

Dear Phil, I'm interested in finding people (Amiga Users) to swap Hints & Tips, talk about the latest games and swap playable demos. Please ask people to send me a letter so we can talk.

*Bill Fife
21 Lyton Street
Blacktown, NSW, 2148*

Ed: Okay, Bill. Listening, everyone? Please send Bill a letter so he can talk to you. How's that?

Fruitless Police Quest

Dear Phil, I have spent the past year searching for the games *Police Quest* 2 and 3 but so far I've been unsuccessful. Can you please help me out? I'm willing to pay cash for full in-the-box versions of both games.

*Steve Miller
Caringbah, NSW*

Ed: If any readers are wanting to part with their copies, drop me a line here at ACAR. Meanwhile, Steve, the best place to write with requests like this is to the

Realm's Swap Shop.

Games advice wanted

Dear Phil, I'm an absolute games freak and would like some advice on what to buy next. I like most types of games but really like adventure, arcade adventure, action, racing and platform. Here are some games that I already have *Superfrog*, *Body Blow*, *SFII*, *Flashback*, *Monkey Island II*. So could you PLEASE recommend any games you thoroughly enjoyed.

*M Crocott
Cootamundra, NSW*

Ed: Gee, Mr Crocott, you've already got a pretty handy collection. The most obvious lack in your collection at the moment is *Zool*, especially if you're a platform fan. Other than that, probably the most outstanding Amiga game this year has been *Pinball Fantasies*. Contact Hotpoint Software for more info on both titles - you'll find their number in this month's review of the CD-32 version of *Pinball Fantasies*.

CIVILIZATION 1828 / 182%(C)	Ant D'Nuit	VIDEO KID 425, 780 Axl Rose
David Dilkes	NINJA MISSION 66,528 C Toyne	VIRUS 22,637 Jason Dykstra
CONT. CIRCUS 4,815,390 Dolly	NITRO 283,000(C) B Bannerman	WINGS 509 Kills Charles Smith
CRAZY CARS 93,622,590(C)	NUCLEAR WAR 990(C) Paul Rucci	XENON 2 1,107,280(C) Mark Porta
Robert Cameron	N.Z. STORY 546,695 E Beaton	
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3,000,000,000 Michael Summers	OP. THUNDERBLT 255,075 A Smith	ARKANOID 2 756,250 Mean Max
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LEATHERNCK 88,700 T Humpries	SWIV (H) 2,108,210(C) R Adams	THE TRAIN 9,500(C) Adam Annen
LIVE & LET DIE 96,520 M Beaton	SWIV (J) 2,417,330 S McKinlay	THUNDERBLADE 1,851,040
MAJOR MOTN 50,658 O Webster	T.M.N.T. 546,600 (C) J Leekin	Matthew Inman
MENACE 996,481 Kamakazi Andy	TERMINATOR 2 254,960 P Rucci	THUNDRCT 310,100 S Kandaurov
MIDNIGHT RESISTANCE 332,610	TEST DRV 2 659,992 M Summers	T.M.N.T. 4,397 Adam Annen
Chris McInally	TETRIS 65,300/L-1417 Ray 'The	UNTOUCHABL 70,230 S Watford
MNDWLKR 306,214 P Schumacher	Legend' Brown	WONDERBOY 4,775,470(C) Lee
MOUSETRAP 71,977 Davo Rich	THUNDERBLD 2,034,040 De Moose	Walters
NARC 180,800 Damien Carsburg	TOKI 115,963(C) Loopy	
NECRONOM 1,181,360 J Rotten	TV-SPORTS BSK 268-0 T Harbisher	
NIGEL MANCELL'S F1 GP 160(C)	TV-SPORTS FT 189-0 D McKinley	

Scores followed by (C) indicate that the game has been completed/clocked.

MICHAEL SPITERI'S Adventurer's Realm

Merry Christmas, Realmers! Welcome to the special Festive Edition of Adventurers Realm (basically the usual stuff with a nicer name). No doubt many of you have received or will be receiving a couple of good adventure games for Christmas, and no better place to solve your woes than here in the adventure hints and tips department. If you are stuck in a game then try one of the following:

- 1) Take an aspirin - you'll probably need it.
- 2) Send away for one of the Realm's free hint sheets, if we have one for your game.
- 3) Drop a line to one of our many Clever Contacts (full list published next month!)
- 4) Order one of the Realm's hint

books or hint disks (they are really good!)

5) If any of the above fail, send your problem to me, yes me, and I'll see what I can do. The address to write to for adventure hints, tips, problems, natter, chatter, rumors, complaints, etc. is: Adventurers Realm, 12 Bridle Place, Pakenham, Vic 3810.

Kamikaze Andy resides deep in his Dungeon - he's our resident role playing game expert (he is also pretty cluey when it comes to games in general). Drop Andy a line at: Realms Dungeon, PO Box 1083, Canning Vale, WA 6155.

Always enclose a stamped addressed envelope when writing to any of the addresses published in the Realm.

Realm's even more fantastic Hint Disks

If you didn't know already, a second Realm hint disk has been released, and let me tell you, it has to be the best dressed and most easy to use hint disk ever.

It features a very easy to use interface that allows you to display hints and maps at a click of a button. It also has a groovy background tune. Absolutely packed to the last remaining sector with hints and maps, it is an absolute bargain at just \$7.00 (includ-

ing p&p) or \$5.00 if you supply the disk and stamped addressed envelope.

Not as pretty but just as useful is the first hint disk which is also packed to the brim with hints. The two disks combined feature help for around 200 adventure games. Not bad eh?

To order either disk send a cheque to Michael Spiteri for the required amount to:

Realm's Hint Disk, 12 Bridle Place, Pakenham, Vic 3810.

Free Hint Sheets

Kerrie, the Lady of the Realm, in a fit of letter opening, dug her way into the underground caverns of Dork, a dungeon that lies way beneath our abode and is usually the resting place of hint sheet requests that arrive without a stamped addressed envelope. All sorts of other nasty things lie down there, like old copies of *Bastow Manor* and *Lord of the Rings Pt 1*.

Anyway, Kerrie climbed her way out and is now dealing with the huge pile of mail that covers our carpet.

All our hint sheets are absolutely free and you can choose up to four from the list below as long as you send your request with a stamped addressed envelope to: Free Hint Sheets, 12 Bridle Place, Pakenham, Vic 3810.

Hint sheets available are: *Mortville Manor/Maupiti Island, Monkey Island I, II, Space Quest III, IV, Wonderland, Leisure Suit Larry 3, Champions of Krynn, Kings Quest V, Pool of Radiance, Zak McKracken, Zork 1, 2, 3, Bards Tale 1, 2, 3, Hitchhikers' Guide to the Galaxy, Guild of Thieves, Jinxter, The Pawn, Corruption, Faery Tale, Indiana Jones and the Fate of Atlantis, Loom, Space Quest II*, and the 1993 Clever Contacts Listing.

Realm's fantastic Hint Books

There are currently two official hint books available. Volume 1 contains hints and tips to over 40 games, and Volume 2 contains hints and tips to over 25 adventure and RPG games as well as pages of mapping sheets.

Volume 1 is only \$9 and Volume 2 is only \$10. To order either book, drop a line to Darren Perry at 21 Darley Road, Randwick 2031, (with a cheque payable to Saturday Magazine) or give her a bell on (02) 398 5111.

Realm's Trading Post

This is the part of the mag where you can advertise any games you'd like to sell, swap or buy - and it's free! If you are a software pirate selling games that keep your grubby mitts away from here. To advertise here just send the details to Realms Trading Post, 12 Bridle Place, Pakenham, Vic 3810.

Alexander Luddy currently owns *Indiana Jones and the Fate of Atlantis*, and he would like to swap it for *Flashback*. Write to him at 23 Couvreur St, Gerringong, ACT 2605, or ring him at a reasonable hour on (06) 285 2776.

Simon Valentine of RSD Ravenswood Rd, Lockwood, Vic 3539 currently owns *Home Alone* and would like to swap it for *Spy vs Spy*.

Adam Ceremuga c/o J. Ceremuga, Dept of Elec Eng, James Cook Uni, Qld 4811 is selling *Wing Commander* (unused) for just \$55, and also has *Floor 13* which he will swap for a decent adventure game (*Heart of China* would be nice). Phone (077) 737 694.

Andrew McCulloch has a huge batch of Amiga games for sale. At \$15 he has *Drakken*, *Falcon*, and *Their Finest Hour*, and at \$10 he has *Hunt for Red October*, then for \$5 he has *Battleships*, *Hard Driving*, and *Hollywood Poker*. Andrew will swap them for *Space Quest III*, IV, V and *Leisure Suit Larry I, II, III, V*. Drop him a line at 33 Carvie Street, Hillman, WA.

Leslie Meehan of "Tubrabucca", Waukivory Rd, Gloucester, NSW 2422 is currently in the market for *Tank Sim*, *Pacific Islands*, *Team Yankee*, *M1 Tank Platoon*, and *Sherman M4*. Leslie is willing to swap *Double Dragon II* or *Top Banana* and *Zone Warrior*.

Aaron Fumini of 36 Virginia Terrace, Thirroul, NSW 2515 has the following Amiga games to sell or swap: *Shadow of the Beast 3* (\$40), *Titus the Fox* (\$30), and *Rings of Medusa* (\$10).

Doug Smith of 19 Hibiscus Avenue, Brooms Head, NSW 2463 is in

the market for *Willy Beamish*, *Lure of the Temptress*, *Lotus 3*, *Jaguar*, *Fire and Ice* or anything else reasonable. Doug is willing to offer *Monkey Island 2*, *Space Quest 4*, *Castle of Dr. Brain*, *Black Crypt*, *Heart of China*, *Larry 3*, *Colonel's Bequest*, *Camelot*, *Eye of the Beholder*, *Crazy Cars 3*, *Lotus 2*, *Premier*, *Putty*, plus lots of others.

Gary Pettinger of 14 Nelligan Street, Whyalla Norrie, SA 5608 has a long list of titles for sale, including *Space Quest Pack (1, 2, 3)* for \$40, *Bards Tale 2*, *Champions of Krynn*, *Conquest of Camelot*, *Curse of Azure Bonds*, *Dragons of Flame*, *Duck Tales*, *Heroes of the Lance*, and *Hillsfar* for \$20 each, *Eye of the Beholder* and *Pools of Radiance* for \$25 each, and a pack containing *Bloodwynd*, *Cadaver*, *Midwinter*, and *B.A.T.* for just \$40. Gary also adds that some of these games come with hint sheets or clue books.

He also wants to buy for the A500 *Darkseed*, *KGB*, *Bane of the Cosmic Forge*, *Premiere Manager*, *Heart of China* and *Might and Magic 3*.

Matt Grocott has the following games: *Monkey Island II*, *Legend of Kyrandia*, *Indiana Jones and the Fate of Atlantis* (the adventure), *Flashback*, *Dragon's Lair*, *Escape from Singes Castle*, *Body Blows*, *Chaos Engine* and *Superfrog* and wish to swap for *Darkseed*, *Darkmere*, *Syndicate*, *Lionheart* or any other decent game. Contact him at 48 Pinkstone Ave, Cootamundra NSW 2590, or (069) 42 4146 after 4pm weekdays or anytime on the weekend.

Robert Cameron of 11 Wallaby Ave, Kangaroo Flat, Vic 3555 is willing to sell *Zork 1* or *Starflight* or trade them for *Wishbringer*, *Battlemaster* and *Bards Tale III*.

Finally, a small plug for Armour Software (11 Harcombe St, Bell Post Hill, Geelong, Vic 3215), who have *The Great Space Race* - version 2.0. To order just send \$5 and a blank disk.

Clever Contacts

Realm's Clever Contacts are scattered throughout the nation and are willing to volunteer their time and effort to solve your adventure problems. A lot of the contacts make great pen pals, too! Write to Kerrie's free hint sheets for a free Clever Contact 1993 listing, however this will be superseded next month with the release of the Clever Contact 1994 listing. Always make sure you are pleasant when writing to a contact (after all, they are going out of their way to help YOU) and make sure you enclose a stamped addressed envelope and money to cover printing costs.

Finally, a big thank you to all our Clever Contacts for doing a great job.

New contact this month is Robert Cameron of 11 Wallaby Ave, Kangaroo Flat, Vic 3555. Robert can offer help in *Bards Tale II* as well as a very strong character disk (you supply the disk). Robert can also help out in *Maniac Mansion*, *Larry 1, 2*, *Infidel* (with language translation), *Lurking Horror*, *Suspect*, *Ballyhoo*, *Hitchhikers' Guide to the Galaxy*, *Suspended*, *Starcross*, *Deadline*, *Witness*, *Moonmist*, *Planetfall*, *Stationfall*, *Enchanter*, *Sorcerer*, most of *Spellbreaker*, *Zork 1, 2, 3*, *Beyond Zork*, *Zork Zero*, some of *Keef the Thief*, and *Search for the King*.

Doug Smith of 19 Hibiscus Ave, Brooms Head, NSW 2463 can offer help in most Lucasfilm, Delphine and Sierra Games, and also some help with *Castle of Dr Brain* and *Fool's Errand*. Doug has a saved game for *Fool's Errand* with all solutions up to and including the Sun Map. Anyone sending a disk and postage is welcome to this. (Mike: Doug adds that he will appreciate any help locating the 14 treasures).

Adam Ceremuga c/o J. Ceremuga, Dept of Elec Eng, James Cook Uni, Qld 4811 can offer help in the following games: *Another World*, *It Came from the Desert*, *Rocket Ranger*, *Defender of the Crown*, *Monkey Island 1 & 2*, *Police Quest 1 & 2*, *Indiana Jones and the Fate of Atlantis*, *Flashback*, *Conquests of Longbow (Robin Hood)*, *Larry I, III & V*, *Sim City*, *Sim Ant*, and the first two chapters of *KGB* and *Phantasy III*.

I get a lot of queries from people asking why it takes so long to get things published in the Realm. Well, for starters putting together a magazine and printing it takes time. To give you some idea, I'm typing these words on October 22nd. In general, we work two months ahead. So, if you write to me before December 18th, then your letter will appear in the February 94 issue. I hope that clears a few things up.

Adam Ceremuga from Qld writes: "Some fellow was asking about *Police Quest IV* and you, ahem, incorrectly stated that it was unlikely. In fact, it is coming out about Christmas and the designer this time is not Jim Walls but a retired LAPD officer. I have no idea what it is about. Talking of Sierra, doesn't it make you sick how a company is so shortsighted to drop the Amiga market just because sales are poor in the USA. In Europe and Australia Sierra games were always popular enough to warrant further development. Is there any chance of the CD32 being supported? I know that Kamikaze Andy stated in the October issue that *Kings Quest VI* was ready to ship for the Amiga, but

Realm's Chit Chat

frankly I think he was grossly misinformed."

Mike: Kamikaze Andy grossly misinformed? Never! Highly unlikely! Most improbable! Though without knowing Andy's sources, slightly possible. Ahem. Hey! I was half right about *Police Quest* - the bit about Jim Walls packing his bags and heading off west. As for the Sierra saga, I'll drop them a line and obtain the facts, quoting your letter too, Adam.

Peter J Colelough, of 12 Tulloch Close, Singleton, NSW 2330 writes: "I was thinking of starting a Nationwide Swap Club where people who are after certain software or want to sell or swap their software can write to me and I would have the names of

other people that would be able to help them out. I would act as a middle man. Depending on the response I would issue a monthly newsletter with an updated list of members and a list of software they had or were after. Because of the new Amiga 1200 my theory is that the A500 will sooner or later become like the C64 and would justify my club. I do not want a run in with the law so if the software is pirated, do not bother wasting my time or theirs. Also, if you have any advice or ideas please write to me."

Mike: There is already a nationwide swap club - it's called Realm's Trading Post. Seriously though, I think that's a great idea, Peter. Drop a line to Peter if you'd like to get involved.

Matt Armstrong & Gang have sent in a hint sheet for *Genghis Khan*. Much appreciated Matt, but I'm not sure if it's a very popular game. Anyhow, if anybody would like a copy of the hint sheet, drop me a line, and if the response is strong enough, I'll make it an official Realm hint sheet.

Finally, no, we do not offer a *Space Quest V* hint sheet ... yet (it was a typo).

Adventure Problem Centre

Yes folks, this is the part of the Realm where you can air your problems or support some troubled people. Many thanks to those who wrote in with replies.

Daniel Cannon of Dubbo in NSW is first off the ranks as he is stuck in *Legend*. Daniel writes: "I have made it up to the second level of the Treihadwyl dungeon. I can get the permit to see the King but I need another Ornate key to open the door so I can get outside, but there are only four I can find (which I use to open the four gates). I have a silver key but there are no doors to use it in.

"Also, there is a weird room with runes on the floor and a door over water that you can't reach. These parts have been bugging me for ages, I hope

someone can help."

Matt Armstrong from Geelong in Vic is next with a particular problem in *Flashback*: "I'm on level 2. I'm in New Washington and I can't seem to finish the part where you have to escort the V.I.P. Will someone please help!"

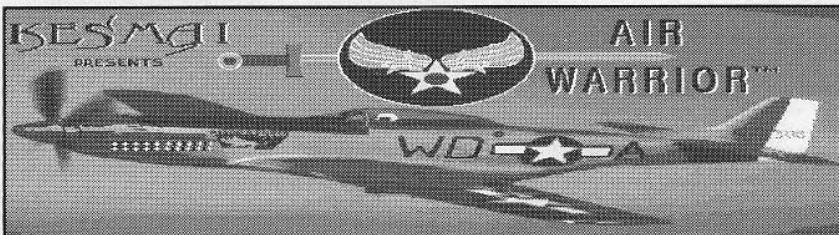
Matthew Houweling of Mandagery in NSW is currently stuck in *Indiana Jones and the Last Crusade*, near the casket in the catacombs under the library. He can't seem to get to the casket. Any takers?

Joshua Maley was stuck a couple of months back in *Indiana Jones 4*. Fortunately, Chris Kaiser has come to the rescue: "Go back to the cupboard where you found the crescent shaped gear, then look at the picture on the

cupboard door. If you can make sense of the picture you will understand how to open the door near the statue. The pictures on the cupboard represent all the items you have collected. The stick figure with the horns represents the statue's arm."

Dave Scott of Innaloo was also stuck, but this time with *Millenium 2.2*. Another Chris comes to the rescue, this time Chris O'Donoghue from New Zealand: "Well, first *Millenium 2.2* stands for 2200 AD. To colonize another satellite you must first build a S.I.O.S for it. To get the necessary elements send grazers to the asteroids. After you destroy the Martians it gets pretty boring so I've never bothered to recolonize Earth (the point of the game)."

ENTERTAINMENT



Playing against your computer can get pretty dull. Two player games are an improvement, but forty player games are even better! That's the promise of the first of a new breed of on-line games, says Phil Campbell.

Walk into any city video-game arcade and you'll see the latest trend in electronic entertainment - row upon row of data-linked multi-player games. Usually, they're car racing simulations that pit you against a pack of friends; one coin each, one set of controls each, one screen each - and a data network that ties you together in one huge gaming environment. State of the art stuff, and jolly good fun, too.

Now you can do the same thing from home. All you need is a modem to link your system to the central game computer by phone, a healthy bank balance for the on-line charges, a reasonably fast personal computer, and a copy of *Air Warrior*.

Players from all capital cities can dial in to their local Oz-e-mail "node" and immediately join in an air battle with up to forty other players on the system.

Every game is different, because you're flying against real-life opponents who react unpredictably, who make mistakes, and who sometimes have flashes of brilliance.

When you start, take a moment to admire the on-screen scenery. It's not quite state of the art, but it's not bad either. On the down side, the ground features are fairly unsophisticated - pyramids for mountains, blocks for buildings, and not much else. Cockpit details are nicely done - though on the Amiga 500 version, the action is a little slow.

Technology is limited to World War II standard, and I'm flying a humble Spitfire. There are no high-tech fire-and-

forget missiles - if you want to score a kill, it's a matter of getting close enough to your opponent to blast him out of the sky. In our playtest, this took quite a while - most game-journalists are slow learners, and for the first ten minutes we were blindly flying in opposite directions. Make no mistake, the game is dull if there's nobody to fire at!

Finally, I spot a dot in the distance. At full throttle, I gradually pull closer, and decide to hurl some invective from the keyboard - the messages you type are displayed on the bottom of your opponent's screen. While one hand types the words "Eat lead, sucker," the other pumps the trigger on my joystick. He swerves. I swerve. I fire again - and the enemy plane explodes in a ball of flame.

That's just a start. There are 23 historic aircraft to playtest, with realistically simulated dynamics. And there are

FACTBOX

The first of a new breed of multi-player on-line games. Suitable for city-folks only - the STD rates are a real killer - and even then, you'll be paying \$5 per hour on-line fees. But for the money, you get to fly against ace pilots from all round the country in a classy World War II flight sim!

Ratings:

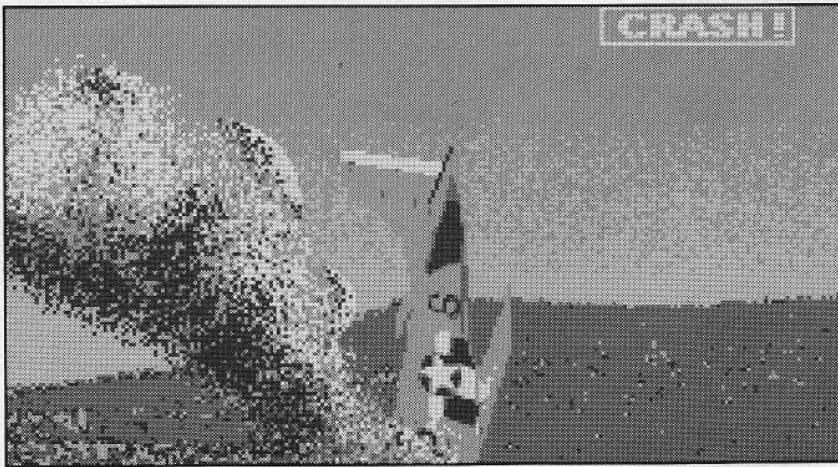
Graphics:	78%
Sound:	79%
Gameplay:	82%
Overall:	82%

For more information, contact Metro Games (03) 329 1999. RRP \$89.95.

reconstructions of famous airbattles, like "Tora Tora Tora", "Dambusters" and "The Raid on Permuda."

The truth is, multi-player games like *Air Warrior* are a heck are of a lot of fun - and they might be dangerously addictive. Be warned. At five dollars per on-line hour, one or two battles each night could add up to a very expensive habit. And if you're planning to let the kids loose on the system, I have one simple word of advice. Don't.

Versions of *Air Warrior* are available for all major hardware platforms, including IBM PC (disk or CD-ROM), Amiga and Macintosh - all are compatible with the on-line system.



Pinball Fantasies



There's been a pinball revolution on the Amiga in the last few months. Now it's about to hit the CD32. Laetone Gravolin reports.

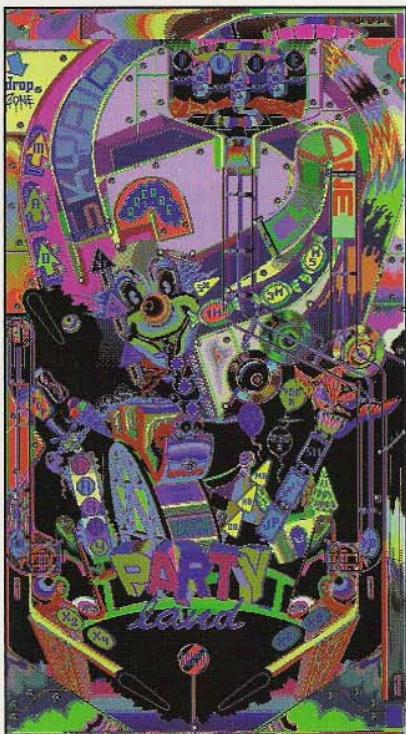
Ah, the old pinball machine! What an invention. Lights flashing on and off, electronic noises here and there. But time has passed, and the poor old pinnie grew less popular. Today we are lazy, those

of us who have "good computers" (referring of course to the Amiga) don't have to go to the pinnie arcades - we just sit and play in our own home. And now, it's better than ever.

With 256 colour graphics, high quality soundtracks and endless fast moving action, the CD32 version of *Pinball Fantasies* is a one in a million game. On the Amiga, *Pinball Fantasies* was superb. On the CD32, it's sensational.

There are four tables, each with a unique theme - Partytime, Roadrace, Horror and GameShow. The action is truly unbeatable - you actually feel like you're leaning over a real pinball machine. The game is so close to reality you could call it a pinball simulator - you can freeze the flippers, the flippers might decide not to work, and you can even "tilt" with the selector buttons on the back of the CDTV controller.

The ball has a nice shiny rolling effect to it, and the flipper and ball sounds are almost real. In fact, I guess they ARE real - digitised from a genuine pinnie. The pinball table covers three screens which scroll up and down - the effect is silky smooth, but it can make you rather dizzy at times. As in



FACTBOX

The CD32 version of *Pinball Fantasies* is fantastic. There's the same great gameplay as the Amiga version, enhanced with the addition of a far greater range of colours and sounds.

Ratings

Graphics:	91%
Sound:	90%
Addictiveness:	90%
Gameplay:	94%
Overall:	91%

Distributed by Hotpoint Software (02) 428 7791. RRP \$69.95.

any pinball machine, there are Bonus Points, extra balls, and other goodies to aim for. Control with the CD32 joypad is fine - use the red button for the right flipper, and the cross pad for the left.

There are no instructions with the game - not even on the CD. I had to spend half an hour of my valuable time working how the game was played, which didn't thrill me too much. But in the end, it was worth it.

The graphics are of flabbergastastic quality - the same layouts as the Amiga version, but with much more subtle colour tones and transitions. Ultimately, that's the benefit of the AGA mode extended palette - not so much so that you can create that elusive tangerine colour you've always wanted, but that you can create shades in smooth transitions to heighten the effects of depth and shadow.

The CD soundtracks are nice too - another nice addition to the original game. The standard Amiga version of this game has the same structure and gameplay, and the best thing you can say about the CD32 version is that it's just as good.

If you're looking for hours of fun on your console, then I can guarantee that it doesn't come much better!



Planning to buy the latest Amiga dream? The new Amiga CD32 is looking good at all levels, and if the marketing goes well, it's certainly got the hardware specs to blow poor Sega and Nintendo out of the water. When you buy a CD 32, you'll find two games are included. Laetone Gravolin checks them out.

Diggers

Diggers is an arcade/strategy game. You, the master miner, have to conquer 35 zones of the planet Zarg to win. Firstly you have to pick your digger race - there's a choice of four types, and they all have different skill levels. Some are faster, some are stronger. Once you've chosen your team, it's time to pick a zone - on the map, your choices are limited to two possible zones on each level.

Now it's play-time. The game screen shows a cutaway view of a mine - green grass and sky at the top, tunnels through the earth below. Colour transitions are smooth and well shaded. You control five men, each of which you can set to perform different tasks.

The object of the game is to raise the required amount of cash before your computerised opponent does. To earn the cash your diggers make mines and dig for various sorts of minerals that can be traded at the bank. If the diggers stand around or dig and find nothing they start to get seriously bored and start to do things themselves, and they can sometimes die as a result.

If you don't want to raise all the cash straight off, and you want to have a bit of fun, you can purchase various digging tools. Tunnelers, explosives and first-aid kits are very helpful in the later parts of the game. Don't want to be bothered with collecting cash? That's just fine - all you have to do is dig into your opponent's mining complex, and if your miners are strong enough you can go around killing them.

FACTBOX

Diggers and *Oscar* are included free with every CD-32, so don't go trying to find them. On the whole, they're very much samples of "the early days" of any new technology - an indication of what lies ahead, though not yet mature. Both games are fun, and will give early CD-32 buyers plenty to play with!

Ratings

Diggers

Graphics:	92%
Sound:	90%
GamePlay:	89%
Addictiveness:	90%
Overall:	91%

Oscar

Graphics:	77%
Sound:	74%
Gameplay:	86%
Addictiveness:	85%
Overall:	79%

The control system is a bit klutzy - the CD32 controller works fine, but to get your diggers going, it's a matter of selecting actions from an icon menu, which then disappears until you call it up again. It's a bit like the *Lemmings* control system, but not nearly as intui-





tive. Even so, when you've got all your diggers at work you can save the game when you have completed a zone. (The CD32 saves games in a special storage area - your data is safe even when you switch off the machine.)

Graphics and game play are excellent and the CD sound is absolutely fantastic. I wouldn't suggest buying a CD32 just for *Diggers*, but when it's released as an Amiga game on disk, I'd recommend it to anyone.

Oscar

The second game on the CD-32 introductory disc is a brightly coloured, fast moving action/platform game in

which you play the role of a quite ridiculous looking fellow by the name of Oscar. One hot summer night he decides to go to the local cinema. He walks into the foyer and looks at the doorways to each theatre in the complex. From here, you're in control. Oscar needs to complete all these movies to win the game, and they can be played in any order.

There are all sorts of themes - Westerns, Horror, Game Shows and a few other surprises. In each movie, Oscar has to collect a number of statues of himself, avoiding monsters that are all out to exterminate him. Once he has collected the statues he has to get himself to the clapper board to go to the next stage. After he has completed the whole movie there's a bonus level in

which he can gain extra points.

During a movie, Oscar can collect items that help him along the way, like a trusty killer YoYo, or some handy wings. As usual in these games, every 5000 points you get a extra life. There are plenty of dangers too, like water and hills, so you can't slow down. If you see a big red elephant, run in to him - he's your friend, and if you loose a life you will be brought back to where you last bumped into him, rather than right back to the start.

Now the bad news. For a CD-32 game, graphics could be a lot better. The same goes for the sound - I thought it was terrible. But in the end, there's so much fun in the gameplay that you'll forget about the problems. In fact, once you start, you won't want to stop playing.



Two Player Games

by Daniel Rutter

Computer gaming is largely a solitary pursuit. Sure, plenty of games offer two concurrent streams of gameplay with one player at a time, and a room full of spectators is guaranteed to afford plenty of entertainment as the only time you'll completely and utterly stuff up your favourite game is when there's somebody watching, but the vast bulk of computer games don't offer that extra thrill of going head to head with an opponent who lives and breathes, and wants to stop you doing the same as soon as possible.

One way to get two player action happening is by datalink or modem connection, where each machine's running its own version of the game but your opponents' actions come down a wire from the other machine rather than being generated by the computer. Many an amusing hour's been spent at the editorial office playing datalinked *Populous II* or *Stunt Car Racer*.

But to use this sort of two player game you need a null modem cable - which costs - or both combatants need modems - which cost more. Getting your whole computer to somebody else's place is a pain, and hooking up by modem when both people have only one phone line (so can't tell each other what they're trying to do while they do it) can be even worse. In general you tend to spend more time setting up than playing, which is not really the aim of the operation.

The kind of two player games I'll talk about in this article are the ones where you just plug in another joystick and get to it. The only problem is that many of the best ones aren't that new, and so could be tricky to find. But it's worth it!

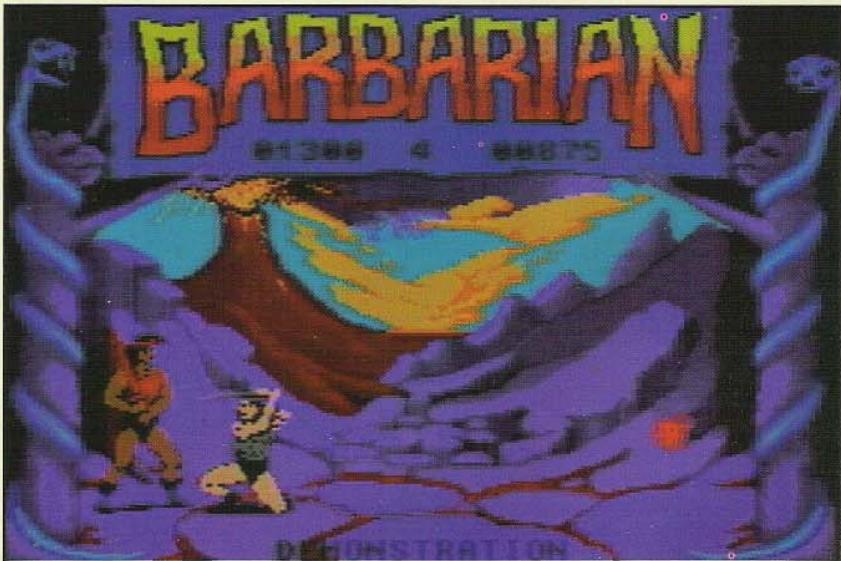
Going back a way, you can't forget *Fire Power*. Hop into a tank armed with inexhaustible cannon rounds and limited mines, find the other guy's base, steal his flag and head home. HUGE explosions, VAST destruction, GREAT fun. On the other hand, it's a bit irritating if you make it to the other guy's base and get blown away - you get a new tank, but it's back in your garage at home. And low lifes can and do spoil the game by laying mines under trees and on public thoroughfares. Well, they spoil it for the guy who hits the mine, anyway. Overall, though *Fire Power*'s stood the test of time and is still a darn good timewaster. Mind you, its one player mode sucks.

Gauntlet II - This is another oldie, which with a printer port adaptor allows up to four players, but works fine with

one or two. You're a little wizard, elf, valkyrie or warrior stomping around many, many diabolically designed dungeons killing monsters. Normally you fight on the same side, but on a level where your shots can stun each other and there's an "it" - a beastie that makes all monsters gravitate to whoever's "it" until he tags someone else - friendships can suddenly dissipate. *Gauntlet II* shows its age - graphics are average, sound copious but low grade and scrolling jerky - but in sheer gameplay it still cuts it.

International Karate Plus - Not quite so elderly this one. It's a karate game, but that's like calling the Taj Mahal a large building. Lots of moves, amazing numbers of silly frills (falling trousers, background fripperies, inter-stage sub games), and three fighters on screen - only two of which can be human controlled. This unusual configuration makes scoring quite strategic, if two human players want to get to higher levels ("uh oh, I need one more hit - stand still, buddy ..."). Add to this the liberal humour and pin-accurate control and hit detection and you've got the best straight punch up game around. The only thing it lacks is a straight two player mode, but this is supplied by ...

Barbarian - Not the low but pretty Psygnosis game. This was made by a company called Palace, and some versions were called something like *Death Sword* for copyright reasons. Anyhow, you play two muscly antagonists with



big sharp pieces of metal who chop people up for a living. Once again, many moves, but it tends to turn into a scissors-paper-stone exercise when you get really good at it. No matter, it's violent and the decapitation and headbutt noises still crack me up. The graphics are lousy, but whaddaya want?

Speedball II - More recent, less graphically violent. Control a team of armoured maniacs and get a small steel ball through the other guys' goal. Plenty of bonuses, team enhancements, transfer players, darn good computer opponents, fab sound, great graphics, blistering gameplay and a guy that hawks ice cream during the replays. What more could you want? Until the Bitmap Brothers release *Speedball III* - if such an idea has crossed their minds - this is it for two player violent sport fun.

If you're squeamish you could try:

Sensible Soccer - Recently re-released in a tweaked '93 version, this is the one which (just) toppled *Kick Off II* as the greatest soccer sim ever. Fast, playable, accurate, fun. Great graphics, great sound, but no blood. Ah well.

The Chaos Engine - The Bitmap Brothers' latest effort, this is another one where you're (ostensibly) on the same side. Toast the monsters, wander around the big mazey levels, grab the bonuses and the dough. Fast and furious, pretty and, naturally, very violent. See the review a couple of months back.

All the above games have something in common - they're commercial. This means that even if they're not sold in the shops any more, copying them is a crime. Full stop. The three games below, however, are freely distributable - copy them as much as you like! Some are shareware, so if you like 'em you pay, but they're always cheap and definitely worth it. You can get them all from any good public domain software supplier, like Megadisc or Prime Artifax.

Dogfight - Like many two player freely distributable games - and the two below - this one has no computer opponent. The coders write them to play with their mates, and don't want to bother with the Nasty Math (a technical term) required to make the computer put up a fight. It's written, very well, in AMOS, and it features you and a friend flying little biplanes over a horizontally scroll-



ing landscape, shooting and bombing hangars, submarines, dirigibles and, you guessed it, each other. The game's basic attitude is summed up by the fact that surviving a landing is impossible. Brilliant fun, but the automatic acceleration needed to play without pain screws up a bit on accelerated machines. C'est la vie.

Solar System Wars - *SpaceWar* used to be one of my favourite games - orbit a central star in two weeny spacecraft, shooting at each other and playing with orbital dynamics, which is another of the interesting things about physics they don't teach you at school. Well, SSW is the same only more so, with special weapons, multiple primaries, black holes and shields - and I can tell you that

many hours have been wasted in the editorial office playing it; the distinctive triple beep of a new game starting has to be muted or editorial wrath is incurred! The two button joystick support's broken but apart from that this game cooks - highly recommended. And the author doesn't even want you to pay for it - although he'd like feedback. By the way, the manual's very funny.

Tank Attack - Another simple game. Two tanks, a few power ups, many mazes and bouncy bullets. Very playable, good graphics, average sound. Amiga Fact #465 - the tanks are in fact pixel-identical to the segments of the centipede type monsters on the last level of *Xenon II*. Just thought you'd like to know that.



Short of money? Then here's the answer - a super cheap collection stacked with Public Domain games.
Laetone Gravolin investigates.

PD Plus 101 PD Games Pack

Tough they may not be graphical wonders and super sound arcade action blockbusters, public domain games are very convenient, fun, easy to use and don't put a hole in your pocket. It's enjoyable non-stop entertainment on the cheap.

Now you can have a box of twelve disks packed to the bootblock with 101 public domain games. Don't panic - I'm not going to review all of them, but I'll tell you about some of the best of these gorgeous little beauties. Take note, though - they only run under Workbench 2.0!

Sea Lance is above average for a PD game. Aliens from an unknown planet have taken over 35 important cities around the globe. You are one of the last people not to be enslaved by this alien breed. Also in your possession is the most advanced piece of military hardware ever, the SeaLance. Designed by a team of American and Soviet experts, this high-tech submarine contains missiles loaded with bacteria that kills the invading aliens race. It's hard to survive long enough to free all the cities. Graphics are nicely detailed, but to my mind the strategic gameplay is a little boring. You'll find the game on Disk 4 of the collection.

Still on a nautical theme, here's an old classic that's well worth mentioning. **Battle Ships** was and still is a very popular game. From plain old paper to fantastic board games to computer games - and now, a PD delight. It's extremely simple to play, but I must say, hard to win. The screen is divided up into 100 different squares

on which you place your ships. For example a destroyer takes four squares, and all will need to be hit before it's sunk. When the computer has set up the board, it's time to grab your mouse pointer and start shooting at the squares you think the enemy ships are in. Basic graphics and sound, but lots of fun, **Battle Ships** is on PD disk 6.

Tiny Ball has to be the tiniest cutest baseball game I have ever seen. The game comes up on the Workbench screen and covers less than one quarter of it. Graphics are very simple but sound is very good. When the computer pitches the ball all you have to do is click the mouse button to hit it at the right instant. The backstop shouts "strike" or "you're outta there" in an almost real voice. And when the deadly dreaded homework comes, this game can quickly and easily be concealed on the Workbench screen. You can find **Tiny Ball** on PD Disk 2.

Nebula is a game that's finally made the transition from the old Tandy TRS 80 to the Amiga. You're in a small tank in a 3D world racing around

FACTBOX

Unlimited enjoyment for a low cost. It's the best PD pack I have come across in a long time, though please note most games only run under Workbench 2.0.

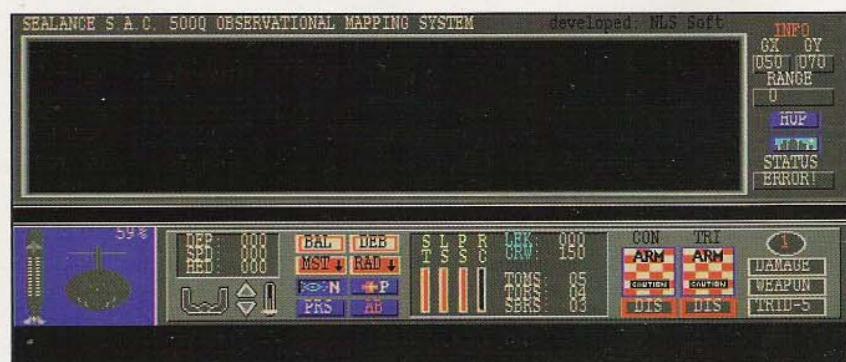
Ratings

Sealance:	89%
Battle Ships:	85%
Tiny Ball:	90%
Nebula:	73%
Extreme Violence:	93%
Overall Pack:	91%

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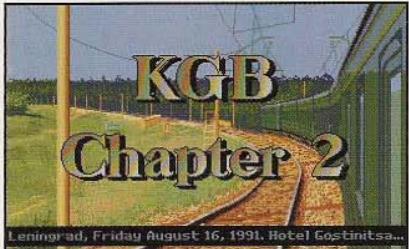
at lighting speed, shooting at enemy tanks before they get to punch the lead into you. The objective is to kill all the enemies before the neutron generator blows up. When it goes, the whole planet goes with it. It's not an easy game - graphics are good but sound is shocking. This one's crammed onto PD Disk 8.

Now for all you violent heads out there who just love seeing your opponent riddled with bullet holes, **Extreme Violence** is for you. This game is sensational! It's a two player game, and there's only one objective - kill the other guy. The screen is divided into two parts, and you walk around the maze looking for your opponent. You can also collect various items - a laser gun, speedy boots, extra points and other goodies. This must be the most fun PD game in the pack. It is on PD Disk 11.



KGB

Full Solution - Part 2



Go up, go through the window, go through the left window, go down, and go through the upper door. Now go through the window, and go through to the side-street. Go the Metro, and follow Obukov to the Hotel Syevyernaya Zvezda. Enter. Go through the upper left door, and wait until Agabekov enters. Leave the bar, then wait till the end of the conversation before you go outside. Follow Obukov to the warehouse.

Go to the bar, through the upper door, and upstairs. Now go through the window. Go through the right window and down, then hide behind the packing cases. Wait for Obukov to leave again, then get the listening device. Go up, then through the window. Go through the left window, then down, and through the upper door; go through the window and to the side-street. Go back to your hotel, and go left, then wait - when the cut-throat guy comes in, show him your ID. Answer with the 3rd, 4th, 2nd, 4th, 3rd

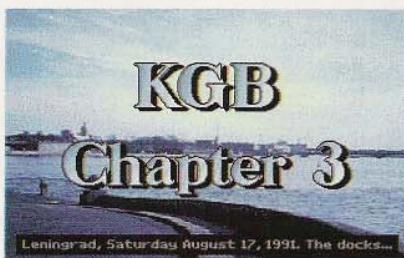
and 5th responses. Ask any questions you can, then go right, and go to your room. Wait - your controller, who goes by the name of S.C.S.I., arrives. Inspect the body, get everything, and call the number found on the dead guy's hand. Answer with the 3rd, 1st, 2nd, and 1st responses. Move the body into the closet, then get and wear the hat and raincoat from the corpse. Turn off the light, then wait. Give the 2nd answer; answer Savinkov 2nd. Ask him Question 1 until he leaves. Now inspect the closet, and get the body. Move it outside the room, then into 3rd room on the left. Switch on the light and inspect the bed; get the bottle, and use the bottle on the body.

Now go outside the hotel, go left, and give the bottle to drunk 1. Go right and enter the building, saying "Evening comrade!" to the night receptionist. Say that you can't sleep. When he leaves, inspect the desk, and get the wheelchair. Go outside and to the left, and drop the wheelchair. Go back to the room with the body, and move the body through the window. Go outside the hotel, go left, and get the wheelchair. Use it on the body, move the body left, and then move the body into the canal. Go back to your room, and wait for Savinkov to come. Give the 3rd answer, then go outside the Hotel.

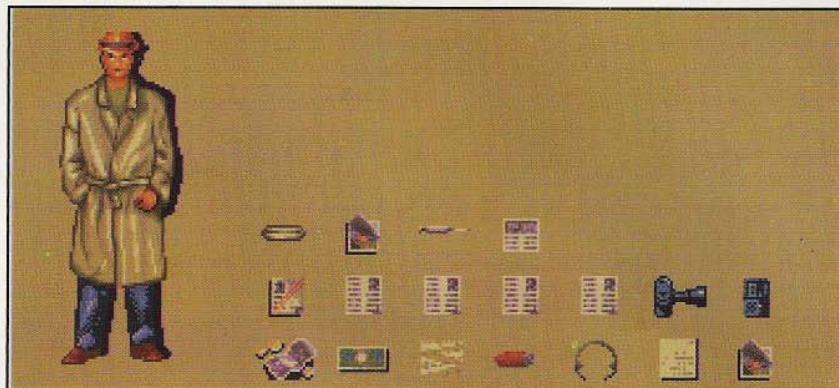
Go to the Hotel Syevyernaya Zvezda - what a mouthful - and go to the bar where you can talk to the mini-skirted blonde. Say the 1st, 2nd, and 2nd comments, then talk to Tamara; this time, use the 1st, 4th, 2nd, 2nd, and 1st comments. Now exit, and talk to Harry Greenberg and Carla Wallace. Go into the bar; Wallace will want to talk. Answer with the 2nd, 3rd, 4th, and 5th responses. She gives you \$150. Ask her all the other questions and then she will leave. Go to the bar, where you will talk to Harry Greenberg. Say the 3rd, 3rd, 4th, 3rd, 3rd, 1st, and 1st comments, then ask him the 1st question until he leaves. Talk to Tamara: say 4th and 1st remarks, then answer 1st, 5th, 2nd, 5th (about the 2nd room), then 2nd, 1st, and 4th. Go up to floor 4, and answer 6th (416), and 1st. Inspect the table, get the ashtray, inspect the mirror, and use the ashtray on the mirror. Go through the hole, inspect the side-table, and get the photo. Now go back through the hole, exit the room, go to the 1st floor and then back to your hotel. Go to your room and use the listening device: switch to voice-activated playback. Remove the headphones, rewind to the start, and drop it on the floor. Use the bed for a quick snooze. When Chapkin wakes you up, answer 1st, then 4th - "I'm ready to talk" - the recorder in the room starts playing. Attack him, and inspect Chapkin. Get the syringe and the gun, and then use the syringe on Chapkin. Talk to him, ask all the questions, and move the body into the room. Wait for Savinkov, answer 3rd, 1st, then 2nd until only 1st is possible; answer 1st, then hand him the gun so he leaves.

Inspect the bed, get all, then go outside the hotel; go left, wait, and then talk to the down-and-out, asking him for the newspaper. Give him the camera, and look at Pravda; go right, and when the phone rings answer it immediately. Give the 3rd, 2nd, 2nd then 2nd responses. When he rings off, go to Ladoga Park and go left. Wait for Harry Greenberg, then answer him with the 2nd and 1st responses.

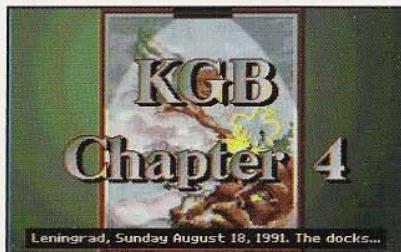
ENTERTAINMENT



Dive into the sea, come up, and then hide behind the fish boxes to the right. Go down, and through the door - now inspect the drawer, get the belt and the bottle. Now go right, then up. Throw the bottle into the sea to the left, then go to the stern deck and go down, where you can hide in the closet. Wait there until 7:00pm, then wait some more. Use the belt on the engine, and hide in the closet. Night has fallen. Go up at 9:30pm, and go to the forward deck and hide behind the fish boxes. Wait three times until 11:59pm; now wait until everyone is gathered, and they all go down below at around 0:33am. Go down and listen at the door, then come back up and hide behind those handy fish boxes. Wait until 4:59am, then wait for everybody to go away and go to the stern deck, and hide behind the fish boxes



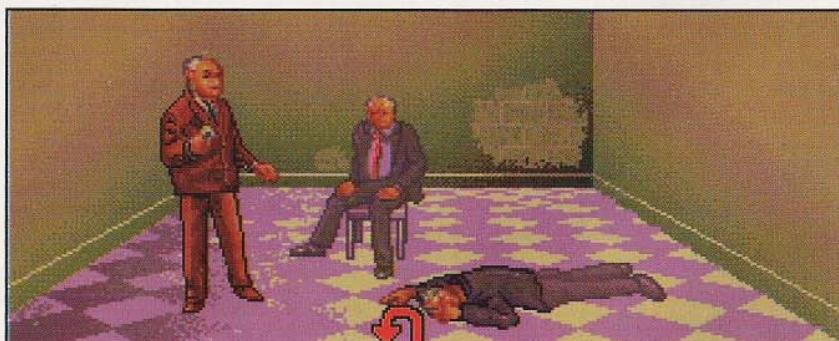
again - no wonder I smell like a fish! Wait until 6:29am, wait again until 7:30am, then dive into the icy sea.



Go to Department 7, wait twice, hail a cab, and follow Agabekov's car. Go through the door, give the 4th and 1st answers, then say 2nd, 4th, 3rd, 4th, and 1st remarks. Go to 4th door on the right, go through the door, and wait. Give the 1st, 4th, 3rd, 5th, 1st, 2nd, 5th, 1st, and 2nd answers, then wait. Go through the right door. Talk to Tsibulenko using 4th, 1st, 1st comments, and he runs away. Use the button. Go through the right door into the cabinet, and wait three times until 10:17am. Talk to the microphone, asking all the questions you can, especially about nurse Saneyeva and patients! Use the intercom, and say the

1st, and 1st comments; then use the button.

Go through the left door, move the body through the left door, and talk to Golubev: say "Saliva". Move the body through the left door. Go outside, go into your hotel, go through the exit to Gorki street, then go through the door and say the 2nd remark. Talk to Harry: say "Memory's Bible" or "The Book of Death", and ask about "The Motherland". Go through the door, and go to Great Patriotic War Street. Enter. This is where it gets serious folks! Give the 2nd answer, and wait for the gallery woman to go around the corner. Hide inside the closet and wait, then use the light switch. Go around the corner, inspect the desk, and get the letter opener. Now inspect the statue and get the sword. Use the letter opener on the statue, and go through the door. Tell the dazed man anything you like - after all, he's dazed. Then answer 2nd, and 1st, wait twice, and give the 2nd answer to Uncle Vanya. When Yegor hits Vovlov, take Savinkov's gun - yes, Savinkov's gun - and shoot Vovlov ... Congratulations! You've made it! The end!



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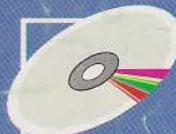


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